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AEROSOL AGE

THE MAGAZINE OF PRESSURE PACKAGING

RARY
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IN THIS ISSUE:

CSMA Aerosol Awards
Packaging Gassified Products
The Aerosol Line at Macy's
A Visit to Continental Filling
Why Do They Buy Aerosols?
Aerosols in Review

December 1956

Looking for improved middle and late knockdown for your budget aerosol insecticide?

Here's what

Du Pont 90% Methoxychlor

Oil Concentrate Insecticide can contribute

CSMA OFFICIAL AEROSOL TEST—LARGE GROUP

	Aerosol Test Knockdown			Aerosol Test Mortality
	5 min.	10 min.	15 min.	
Basic formula* containing 2% DDT	12	28	57	94
Same formula, but with 2% methoxychlor substituted for DDT	22	51	80	85
Official Test Aerosol	29	40	56	86

Note the great boost that methoxychlor gives to middle and late knockdown. It can do the same for your formula and at very low expense. Contact the district office nearest you.

E. I. du Pont de Nemours & Co. (Inc.)
Grasselli Chemicals Department, Wilmington 98, Del.

San Francisco 4, California.....111 Sutter Street
Atlanta 8, Georgia.....739 West Peachtree Street
Minneapolis 2, Minnesota.....1207 Foshay Tower
Cleveland 14, Ohio.....1321 National City Bank Bldg.
Wynnewood (Philadelphia), Pa.....308 E. Lancaster Avenue
Houston 25, Texas.....1100 East Holcombe Blvd.

*The basic formula is a widely sold, low-priced aerosol containing synergized allethrin, another KD agent, plus 2% DDT.

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

...who has the DARK HORSE in the Aerosol Race

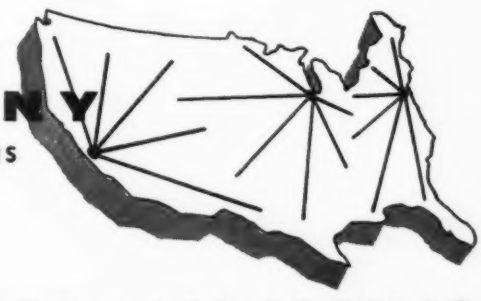
Somewhere in the pharmaceutical, cosmetic, food, chemical or specialty fields today, there are products that are not at all spectacular in their present form or package, but which if packaged as aerosols could become tomorrow's biggest sellers.

You may have such a "dark horse" in your present line.

Today, in G. Barr & Company's laboratories, a continuing, imaginative research program is being carried on to find and perfect these "dark horse" products for tomorrow's markets.

Through constant study of new propellants, new formulations and packaging techniques, we are in a position to offer a unique and comprehensive *Private Label aerosol packaging service*. Through the production of millions upon millions of successfully selling aerosol packages for clients in a wide variety of industries, we have gained experience that has established us as a leader in the pressure packaging field. Yet we market no product of our own.

If you have a product, now being marketed in a standard package, an undeveloped formula, or even the "germ of an idea," we will be pleased to help you ascertain whether it has an aerosol potential.



G. BARR & COMPANY

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PLANTS IN: NEW YORK • CHICAGO • LOS ANGELES

controlled packaging

. . . by **FLUID** — Through use of modern, high speed, automatic equipment
— with **35 years** of accumulated Technical Skill and Experience.

Packaged by

FLUID

"A MARK OF INTEGRITY"

Chemical Company, Inc.

MANUFACTURING CHEMISTS SINCE 1921

[illegible] MT. PROSPECT AVE. • NEWARK, NEW JERSEY

Harry Peterson of Peterson Filling and Packaging Corp., Danville, Ill., one of the pioneers in the aerosol business, is named president of the Chemical Specialties Manufacturers Association.

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The magazine of pressure packaging

AEROSOL AGE

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IMITATED . .

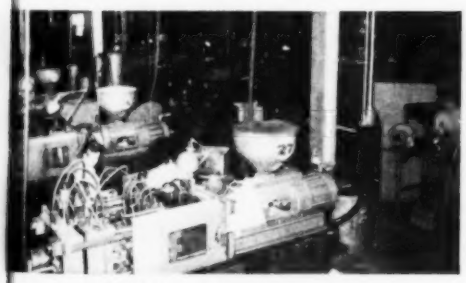
PRECISION

"Known throughout the World"

Microscopic examination for structure of plastic components after exposure to aerosol formulation

BUT NEVER DUPLICATED – THE *Precision Valve*

Engineering Department



Molding Department

Quality Control Department

From planning to commercial production, a new aerosol product requires infinite knowledge, effort and research. Almost every phase of human endeavor contributes its share to the completed product.

The final use, however, is dependent upon the proper valve, which is carefully designed, engineered, and manufactured to produce the proper dispersion of spray, mist or foam.

We at Precision are ready to help you, whether it be formula, package design, or production. Our facilities can be our contribution to the success of your business.

Whether it be a million and ten **or just ten . . .** Precision has or will develop the aerosol valve for your product. Our large quality control department assures you of the finest results along with the economy required for profitable sales.

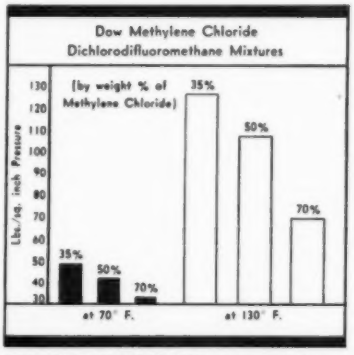
Precision Valve Corporation

700 NEPPERHAN AVENUE · YONKERS, N.Y.

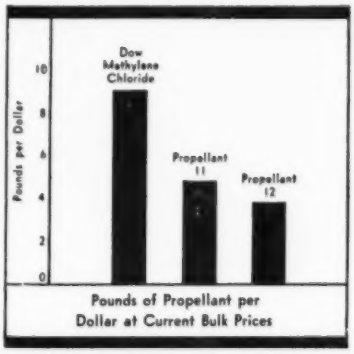
you can put your company in a favorable cost position for the competitive months to come by using Dow Methylene Chloride as a propellant component for aerosols.

cut ingredient costs with

Dow Methylene Chloride



PRESSURE DEPRESSANT characteristics of Dow Methylene Chloride provide flexibility and efficiency to meet the requirements of most aerosol formulations.



LOWER INGREDIENT COST is another important advantage. Dow Methylene Chloride costs only about half as much as trichlorofluoromethane, yet offers superior solvent qualities.

Improved solvency for active ingredients . . . less costly as a pressure depressant, Dow Methylene Chloride does a better job for less

As a pressure depressant replacing trichlorofluoromethane, low-cost Dow Methylene Chloride permits substantial savings in ingredient and formulation costs. It is also a superior solvent, combining effectively with dichlorodifluoromethane to provide constant, uniform and complete dispersion of the active ingredients. In DDT insecticide formulations, for example, its use eliminates specialty naphthas, which have objectionable odors, and reduces the hazard of surface corrosion on wall tile and other types of surfaces.

The excellent solubility characteristics of Dow Methylene Chloride also permit reductions in the amount of petroleum distillates normally employed. Flammability hazard is always lessened or eliminated, because Dow Methylene Chloride itself has no flash or fire point.

It is one of the least toxic of the commonly used industrial solvents, and one of the most stable. It has retained its stability in paint remover formulations under the severe conditions imposed by long periods of storage in tin containers.

All these advantages add up to lower costs . . . ingredient costs, formulation costs, filling and packaging costs. Let us send you a copy of our new Dow Methylene Chloride booklet containing figures showing the dollar savings you can realize in ingredient costs and other useful information. Write today to THE DOW CHEMICAL COMPANY, Solvent Sales Dept. SO 959N, Midland, Michigan.

you can depend on DOW SOLVENTS DOW

Here's a big market . . .

and the valve

to do the job best!

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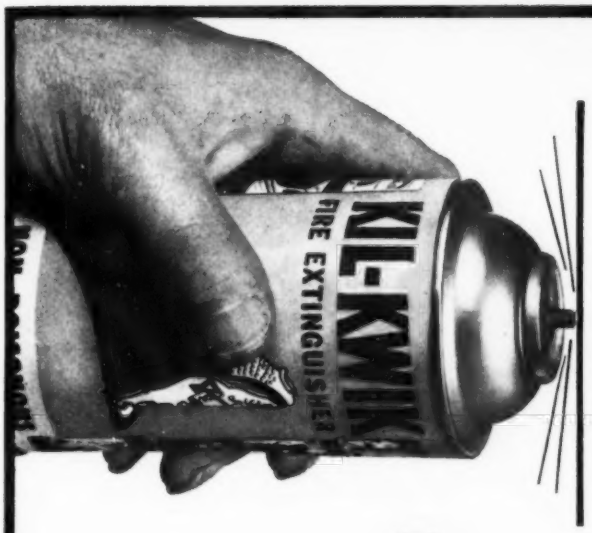
ESTABLISHED IN 1844

AEROSOL VALVES made by the
manufacturer of the Standard Tire Valve since the first Automobile



NOW! SCHRADER ONE SHOT VALVES

1 STRIKE OR PRESS TIP AGAINST HARD SURFACE . . .

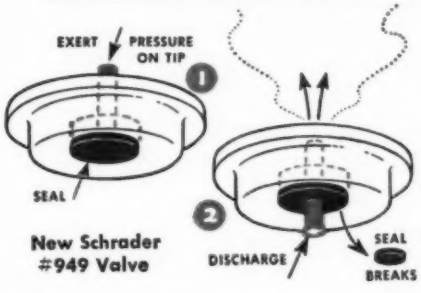
2 AND AIM CAN DOWN AT BASE OF FLAMES

FOR FIRE EXTINGUISHERS

Get into the growing home fire extinguisher market *fast* with Schrader. Order the single-discharge valves you need . . . now. Absolutely non-clogging, positive action of the plastic valves makes them practical for your mass selling. Gas-tight feature of valves makes your fire extinguisher safe to store, handle. Schrader is a leading name in Aerosol valve field. Depend on Schrader for economy and good service.

Schrader®
ESTABLISHED IN 1844

AEROSOL VALVES made by the manufacturer of the Standard Tire Valve since the first Automobile



New Schrader #949 Valve

MAIL THIS COUPON TODAY

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated Dept. AA
470 Vanderbilt Avenue, Brooklyn 38, N. Y.

Please send me samples of Schrader one shot aerosol valves ☐ Price list ☐

Name_____ Title_____

Company_____

Address_____

IS THIS THE WORLD'S LARGEST DOME-TOP AEROSOL FAMILY?

Only Continental offers 6 dome-top aerosols ...sized to suit your every selling need

Here's a truly complete line of giant economy-size, medium-size and small-size containers—tailored to sell your product in its most convenient and appealing form. And because they let you fill all your container needs in one order, Continental dome-tops will shave your shipping and handling costs, too.

Let us start you off with up-to-the-minute deliveries of all the dome-top cans you need, lithographed to perfection by Continental craftsmen. Personalized engineering and research is available, plus contacts with valve suppliers and commercial fillers, if you wish. For the tops in dome-tops, and tailor-made service to match, call Continental soon.

CONTINENTAL CAN COMPANY

Eastern Division: 100 E. 42nd St., New York 17
Central Division: 135 So. La Salle St., Chicago 3
Pacific Division: Russ Building, San Francisco 4

NEW COLOR-SPRAY SIDE-STRIPING GIVES ALL-AROUND APPEAL

Now your aerosol package can look beautiful from any angle, with Continental's new color-striped side-seam. Another Continental "first", this special striping is sprayed on to match the background color of your lithographed design. Gone is that distracting gleam of solder, and the difficult job of paper labeling. Now available on Continental's 6-oz. dome-tops, color-spray side striping will be extended to other sizes in the near future.

TAILOR-MADE PACKAGE SERVICE

Associated Brands, Inc. Buys New Plant

ASSOCIATED BRANDS, INC., one of the leading aerosol contract fillers in the country, has purchased a new, modern plant at 50 Wallabout Street, Brooklyn, New York, as part of their current expansion in the aerosol field. They will move into the new quarters early in 1957, according to an announcement by H. Bruce Hagler, President.

The new building occupies 100,000 square feet of floor space, and is constructed of fireproof brick and concrete. The emphasis in the Associated Brands Inc. operations will be on extensive laboratory facilities . . . with all the necessary space and equipment needed for thorough research, formulation and control.

The latest production equipment and methods will be utilized to provide both pressure and cold fill of cans and bottles. As part of Associated Brands' service, product development and sampling will be done free of charge to prospective marketers of aerosol products. Modern materials handling equipment and loading docks enable shipping and receiving departments to warehouse and make drop shipments as desired by the marketer.

Associated Brands specializes in cosmetics and pharmaceuticals *only*—and prides itself on the fact that there is no possibility of contamination from insecticides, paints, shoe polishes, etc.

The Associated Brands modern bottle, jar and tube filling lines enable the aerosol marketer to make combination units of his aerosol and other toiletries of pharmaceutical items under one roof.

This new modern plant is a culmination of over 38 years experience in the packaging field. All prospective marketers of aerosol products are invited to phone or write for free consultation on their products.

Associated Brands, Inc.

Manufacturing Cosmetic Chemists

35 Claver Place, Brooklyn 38, New York

Telephone: Main 2 - 1030, 1031, 1032

BRICKBATS and BOUQUETS from the MAILBAG

I feel sure you will be interested in learning that *Aerosol Age* is used throughout Europe as the "Bible" for aerosol information. My recent European trip took me through seven countries, and in all my visits to those in the aerosol industry, each individual had a copy of *Aerosol Age*.

In my opinion your magazine is encouraging more people in Europe to enter into the aerosol business, and undoubtedly is stimulating the growth of the aerosol industry.

We note in your October 1956 issue that the cover shows a picture of Plasti-Kote Plant Spray. On page 5 the credits indicate that Newman-Green supplies the valve. However, actually, the photo shows our K-38 valve in use.

Stanley J. Goldberg (president)
AEROSOL RESEARCH CO.
Chicago

Thanks for the kind words, and we are happy to hear that *Aerosol Age* has been so well received abroad, and attained such wide distribution. We are sorry about the error in crediting the valve on Plasti-Kote plant spray. We try to keep our pages as accurate as possible, but an occasional error seems inevitable.

The Editor

"We were the first pressure packers in this country, and, as far as we know, in Europe. From the first issue we have seen we have studied your publication very carefully and found it a most useful source of information on what is going on in this industry in other parts of the world. We are quite sure that your publication will be equally welcome in other pressure packing circles."

E. S. Harrowell, Manager
PRESSURE AEROSOLS FILLING CO., LTD.
Herts, England

We must congratulate you on the fine magazine that you edit. We would be very happy to contribute an article ourselves bringing your readers up to date on developments in the aerosol business in the Argentine.

Romeko S.R.L.
Ciudadela, Rp. Argentina

One of our clients is contemplating marketing an aerosol moth proofing solution. He is much interested in getting information about the market so he can evaluate its potential. Do you have any data which would help?

(Continued On Page 104)

In the Spotlight this month

Motivational Research in Aerosols . . . What motivates Mrs. McGillicuddy when she picks up an aerosol hair lacquer at the Bon Ton Department Store? What does she expect it to do? How well pleased, on the average, is she with its performance? Can she be expected to re-purchase? The answers to such questions as these and a host of others were sought from typical consumers in a recent survey to disclose buying habits. We are privileged to present some of the results in an article by W. Alec Jordan starting on page 30.

Pressurized Space Sprays . . . Formulators of low-pressure insecticidal space sprays have been trying for several years past to reduce costs by substituting deodorized kerosene for some portion of the expensive propellant charge. In an article reporting on U.S.D.A. research along this line it is indicated that replacing as high as one-half the propellant 11 content with kerosene resulted in no loss in performance. See page 35 for the full report.

Aerosols at Macys . . . Macy knows a good thing when they see it—and they have been quick to recognize aerosols as fast-selling articles—logical candidates for Macy private brand items. For the story of Macy's reaction to the growing consumer demand for aerosols of all types, see page 48.

Air-Minded Custom Filler . . . Continental Filling Corp. executives are truly air-minded. From their central location in Danville, Ill. they are able to make effective use of the company's Beech Bonanza to speed up coverage of the surrounding area. "Our office," they say, "is no farther away than your nearest airport." Page 40.

Aerosol Filling Method . . . A method for packaging gassified products which may prove to be simpler and perhaps superior to methods now in use is suggested by a consulting engineer who has been investigating packaging problems in the aerosol field. The method he outlines (for packaging a topping mix) would involve first introducing the propellant gas into the container, via a hypodermic needle piercing a perforable membrane, and then filling the mix in the form of a thin stream or spray through the same opening. The patented method is fully outlined and described in an article starting on page 56.

Award Winners . . . . In the CSMA's 1956 Aerosol Awards Competition pictured on page 74C.

If we can *(and we think we can)*

We will answer your questions on

Aerosol Formulations

As the pioneer formulator of insecticidal aerosols, we have assembled valuable information which could be of interest to every present and future manufacturer of aerosols.

If you have specific questions on the latest developments of formulations and ingredients for household specialty and insecticidal aerosols, our research department personnel will do their best to answer them.

M G K McLAUGHLIN GORMLEY KING *Company*

1715 S.E. Fifth Street / Minneapolis, Minnesota

McLAUGHLIN GORMLEY KING CO.
1715 S.E. Fifth Street / Minneapolis, Minnesota

- We would like to have the answers to the list of questions attached.

*Name*_____

*Address*_____

*City*_____ *Zone*____ *State*_____

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for
the right odor for
your aerosol product

Our aerosol laboratory
has developed a series
of especially adjusted
perfumes for use
in pressurized products

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and information.

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new york 1, new york

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Sun Tube
CORPORATION
HILLSIDE, NEW JERSEY
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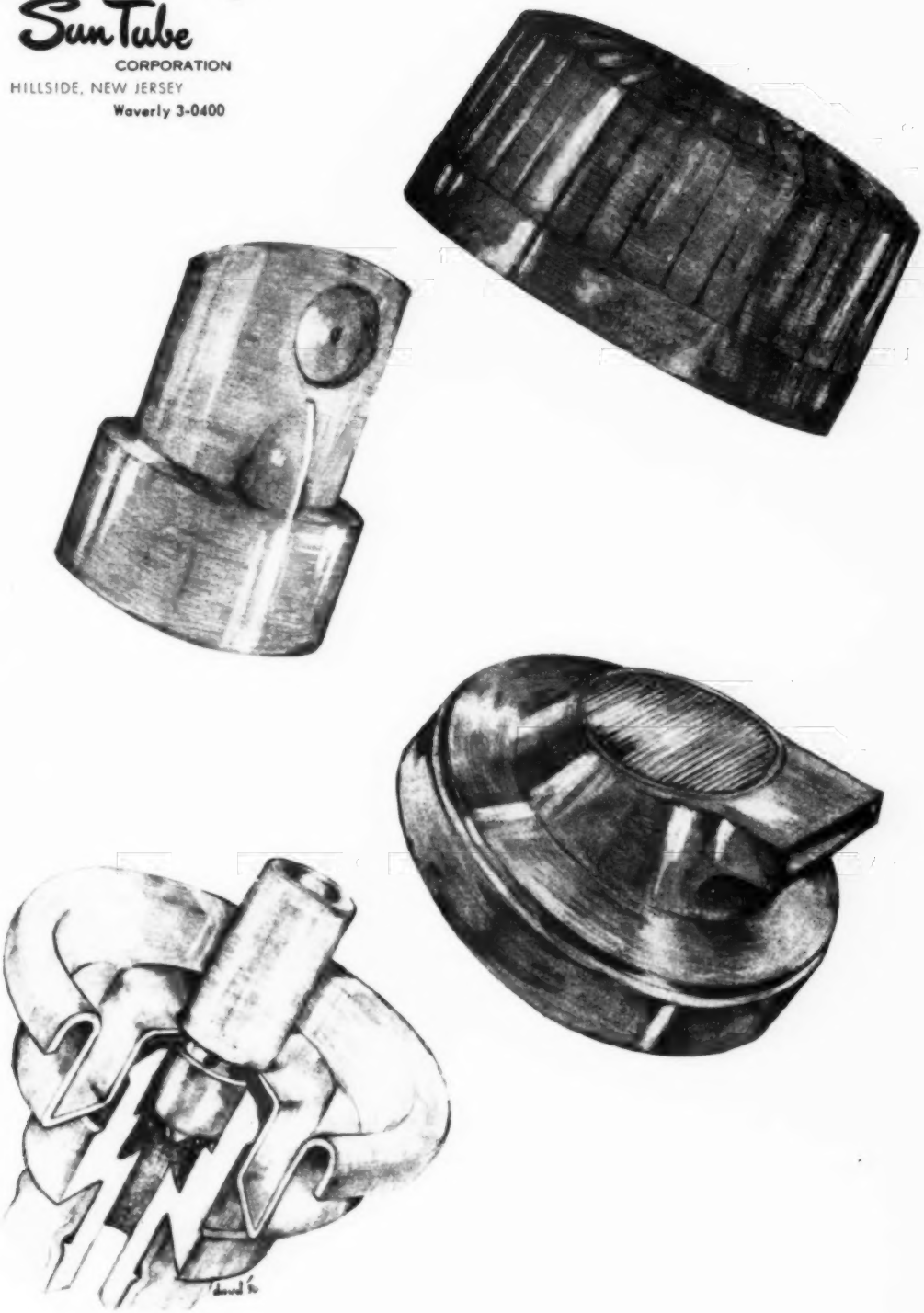


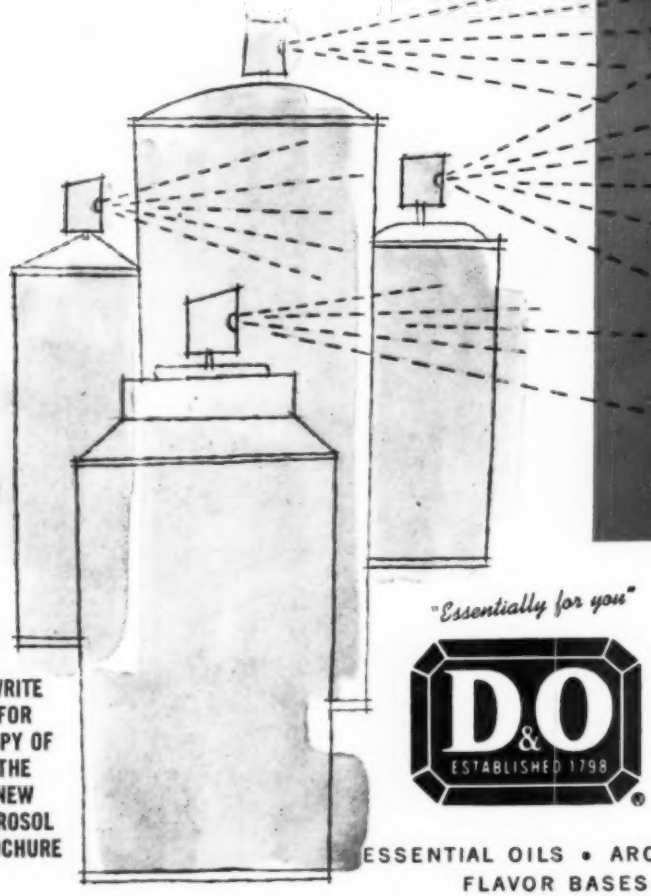
FOR THAT

AEROSOL

IN YOUR FUTURE...

Thoroughly tested perfume compounds, developed in the D&O Perfume Department and checked through all stages to finished product in the Aerosol Laboratory. Shelf tested for stability, corrosion and clogging difficulties. Solubility and discoloration problems eliminated. Complete data, including formulations, available. Let the D&O Perfume and Aerosol technicians put that sales-clinching (problem-free) fragrance into the "Aerosol in Your Future."

COLOGNES
CREAMS
DEODORANTS
HAND LOTIONS
SHAMPOOS
SHAVE CREAMS
HAIR LACQUERS
SPACE DEODORANTS
INSECTICIDES
PET PRODUCTS



WRITE FOR COPY OF THE NEW AEROSOL BROCHURE

"Essentially for you"

D&O ESTABLISHED 1798

Our 158th Year of Service

DODGE & OLCOTT, INC.

180 VARICK STREET • NEW YORK 14, N.Y.
Sales offices in Principal Cities

ESSENTIAL OILS • AROMATIC CHEMICALS • PERFUME BASES
FLAVOR BASES • DRY SOLUBLE SEASONINGS

even Aladdin's Aerosol...

would have needed

POWCO BRAND CONCENTRATES

- Complete aerosol concentrates of all types (standard Powco Brand or custom made). Ready-to-fill.
- Formulations include Allethrin, Pyrethrum, Sesamin, Piperonyl Butoxide, DDT, Chlordane, Perthane, Strobane and other approved toxicants.

Household and Industrial Concentrates: Pyrethrum Extract, Pyrin, DDT (powders and solutions), Lindane, Chlordane, Dieldrin, Malathion and other approved toxicants.

POWCO

KILLING POWER—THAT'S THE THING!

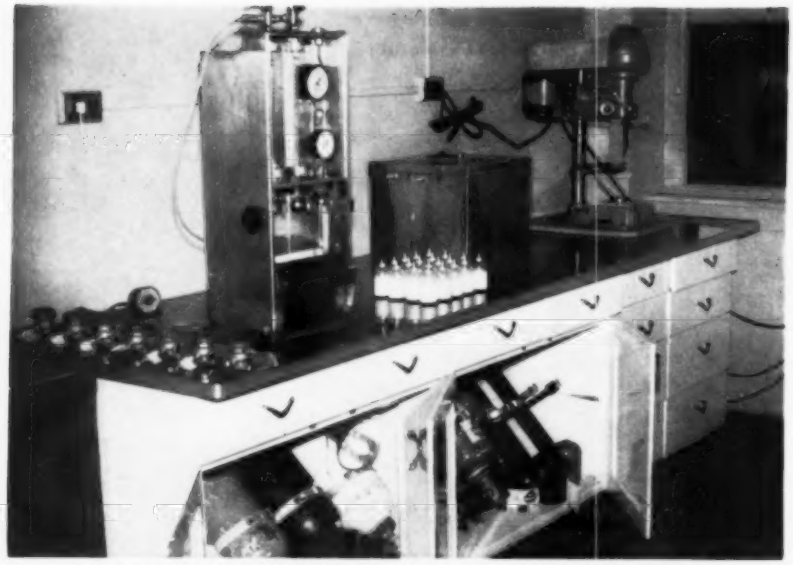
John Powell & Company

Division of Olin Mathieson Chemical Corporation
10 Light St., Mathieson Bldg., Baltimore 3, Md.

New York, Philadelphia, Pittsburgh, Chicago
Denver, Fort Worth, Omaha, Atlanta

Builders Sheet Metal Expands Line of Aerosol Laboratory Equipment

● *Pioneer builders of aerosol testing equipment now offer full line of laboratory and small scale production equipment.*



Complete lab set-up including cabinets, formica tops, tank racks, acetone dry ice cooler, pressure filler and drill press capper, all supplied by Builders Sheet Metal Works, Inc. to a leading formulator.

Builders Sheet Metal Works, Inc. of 108 Wooster Street, New York, are now able to supply a complete line of equipment for an aerosol laboratory, with minimum effort on the part of the purchaser, according to Bill Scheck, vice president.

Builders has been in the aerosol laboratory equipment field for approximately three years, having been commissioned to build some of the original equipment for leading aerosol companies. Builders is willing and able to tackle any job connected with metal work for the aerosol field, since their original business prior to entry into aerosols was in metal fabricating.

The products featured here — the constant temperature water bath drill press, capping machine and laboratory aerosol pressure filler—are just three items in the full line of equipment which is being purchased by leading aerosol laboratories everywhere.

Many other new items have been developed in addition to those pictured here. One of the interesting items is the Snap-On Screw Top for aerosol cans. This allows a simple method of filling a can to test formulas and new products. Cold filling may be done by putting the cold product and cold propellant into a cold can and then attaching the simple Snap-On Screw Top and valve. Pressure filling can be accomplished by an adapter valve on the can of the propellant which converts it into a filling head and allows filling through the valve of the Snap-On Screw Top can.

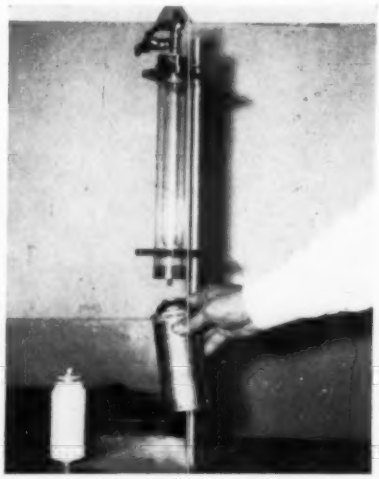
Other standard lines which Builders has developed are new metal to glass stainless steel couplings, corrosion ovens, stainless tanks, tank racks, dry ice machine for producing solid carbon dioxide, laboratory shelving, and pressure testers. One of the new pressure testers developed by Builders is now an accepted standard for testing by piercing the can.

Illustrated Literature

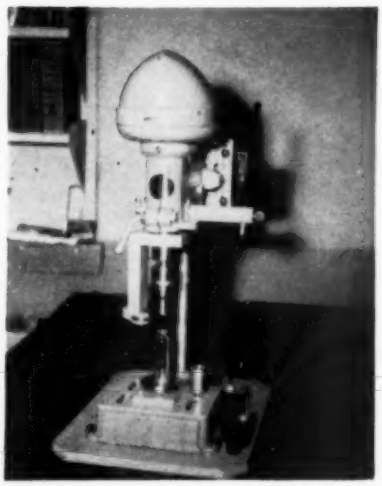
Complete data and illustrated literature on all the above laboratory testing equipment may be obtained by writing to Builders Sheet Metal Works, Inc., 108-110 Wooster Street, New York 12, New York.

Constant temperature water bath with inside dimensions of 14" x 16" x 11" deep. This water bath has fiber glass insulation with thermostatic control and immersion water pump circulator. (Price $188.50)

Laboratory aerosol pressure filler for metering liquids under pressure into aerosol containers. Safety feature is Burette encased in heavy Lucite tube. Sturdy aluminum stand and base available with 30 ML or 100 ML Burettes. (Price $120)



Drill press capping machine for rolling and fastening aluminum or steel valve to top of glass bottles. Production rate approximately two per minute. (Price $198)



New General Electric leak detector checks each can quickly, automatically, safely

Helps assure long shelf life, improves quality control

Continuous production line testing of pressurized cans is now possible with General Electric's new "fixed-head" leak detector. Designed for use by manufacturers of insecticides, hair lacquers, paints, plastic sprays, shave lathers, shampoos, etc., the new unit accurately leak-checks every can on the line. This 100% leak test helps protect product quality throughout its shelf life and complaints and returns caused by deterioration on dealer's shelves can be sizeably reduced.

Automatic rejection of faulty cans can be initiated by the new system. Manual testing of cans is eliminated and this new method is more sensitive and much faster than conventional "hot-water" methods.

Tolerance limits for quality control can be set and maintained through use of General Electric's new "leak-standard." Experience with your product will show the size leak which is permissible to maintain product quality for the desired period of time. The "leak-standard" makes possible quantitative measurement of the leak and proper calibration of the detector to predetermined limits for precise quality control.

For further information about how to apply this new leak detection system, call your nearest General Electric Apparatus Sales Office or write to Section 585–56, General Electric Company, Schenectady 5, New York.

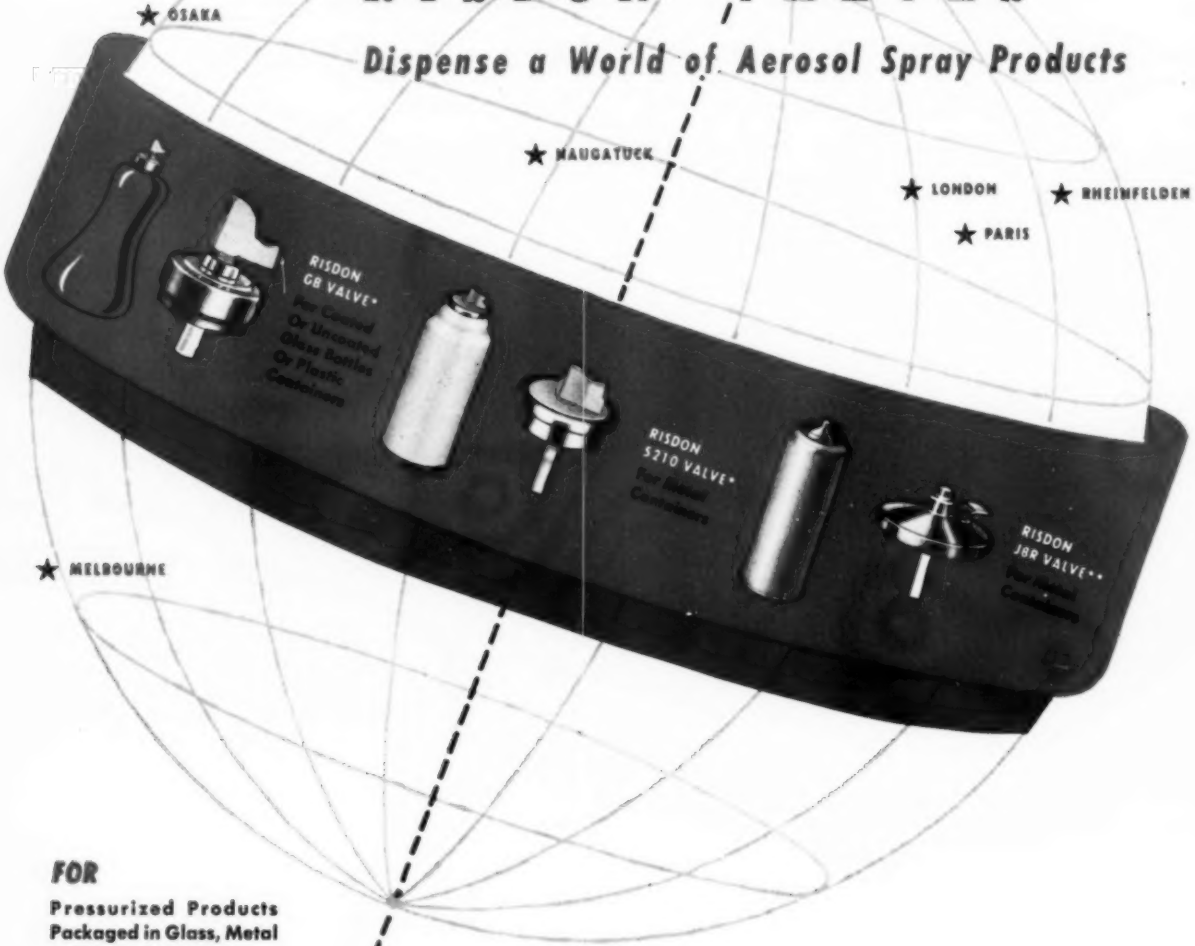
ACCURATE LEAK DETECTION MEANS PROFITS

GENERAL ELECTRIC

Around the World

RISDON VALVES

Dispense a World of Aerosol Spray Products



FOR

Pressurized Products Packaged in Glass, Metal or Plastic Containers.

DISPENSING

Conventional Aerosols, 3-Phase Products, Alcohol Base Products, Water-Base Products, Foam Products, Powder Sprays, Metered Sprays, Ultra-Low Pressure Applications, Products Containing Propellent Emulsions or Dispersions, etc.

Both geographically and in range of application, the Risdon line of aerosol valves covers a world of spray products.

They are produced by Risdon in the U. S. and by licensees in England, Germany, Australia, France and Japan. Here and abroad, they enhance both the performance and appearance of metal, glass and plastic containers, dispensing a vast variety of product formulations.

Write, today, for free booklets on any or all of the Risdon valves shown here.

* *Patents Applied For*
** *Patented*

RISDON

THE RISDON MANUFACTURING COMPANY
Valve Division, Naugatuck, Conn.

RI-80

Write for Nine Fully-tested Formulas!

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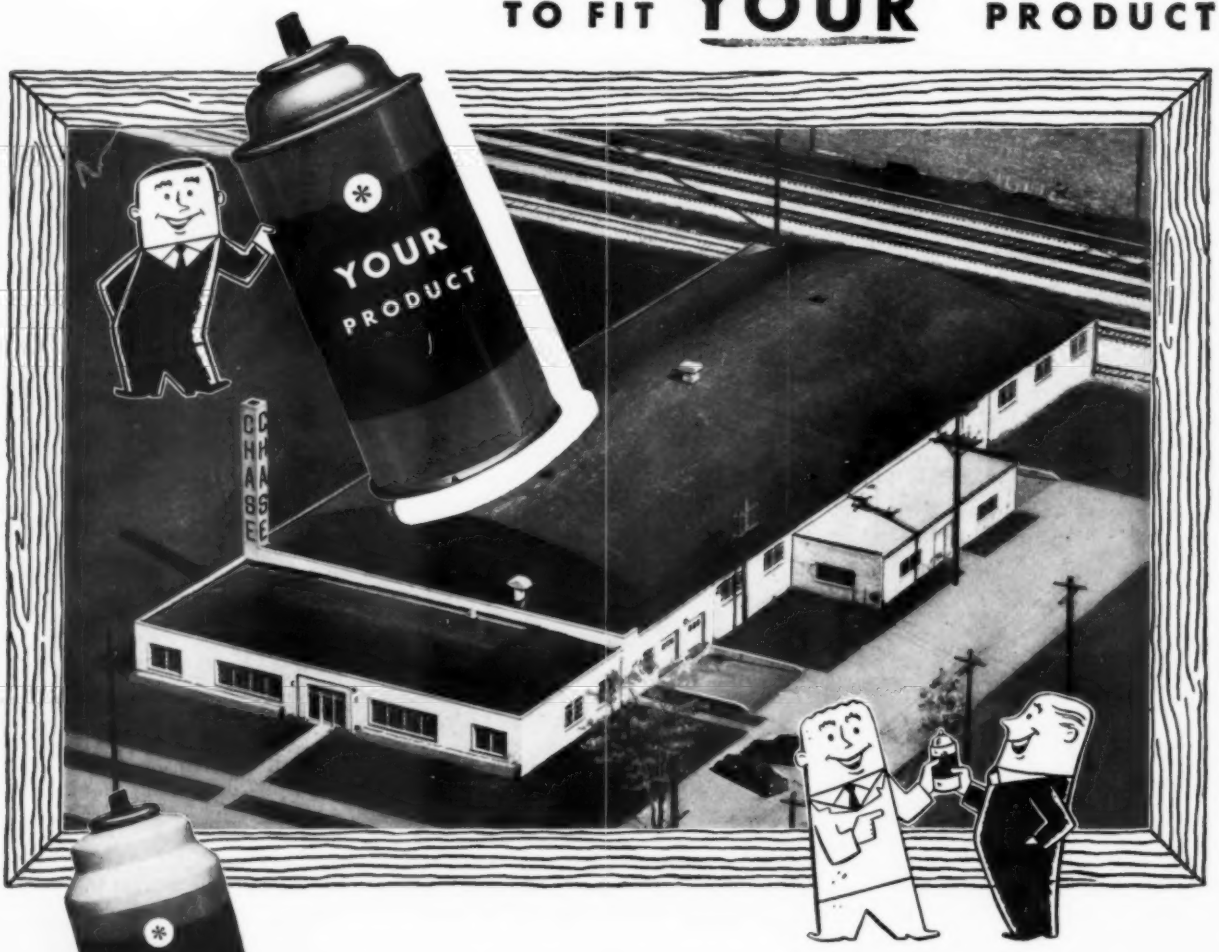

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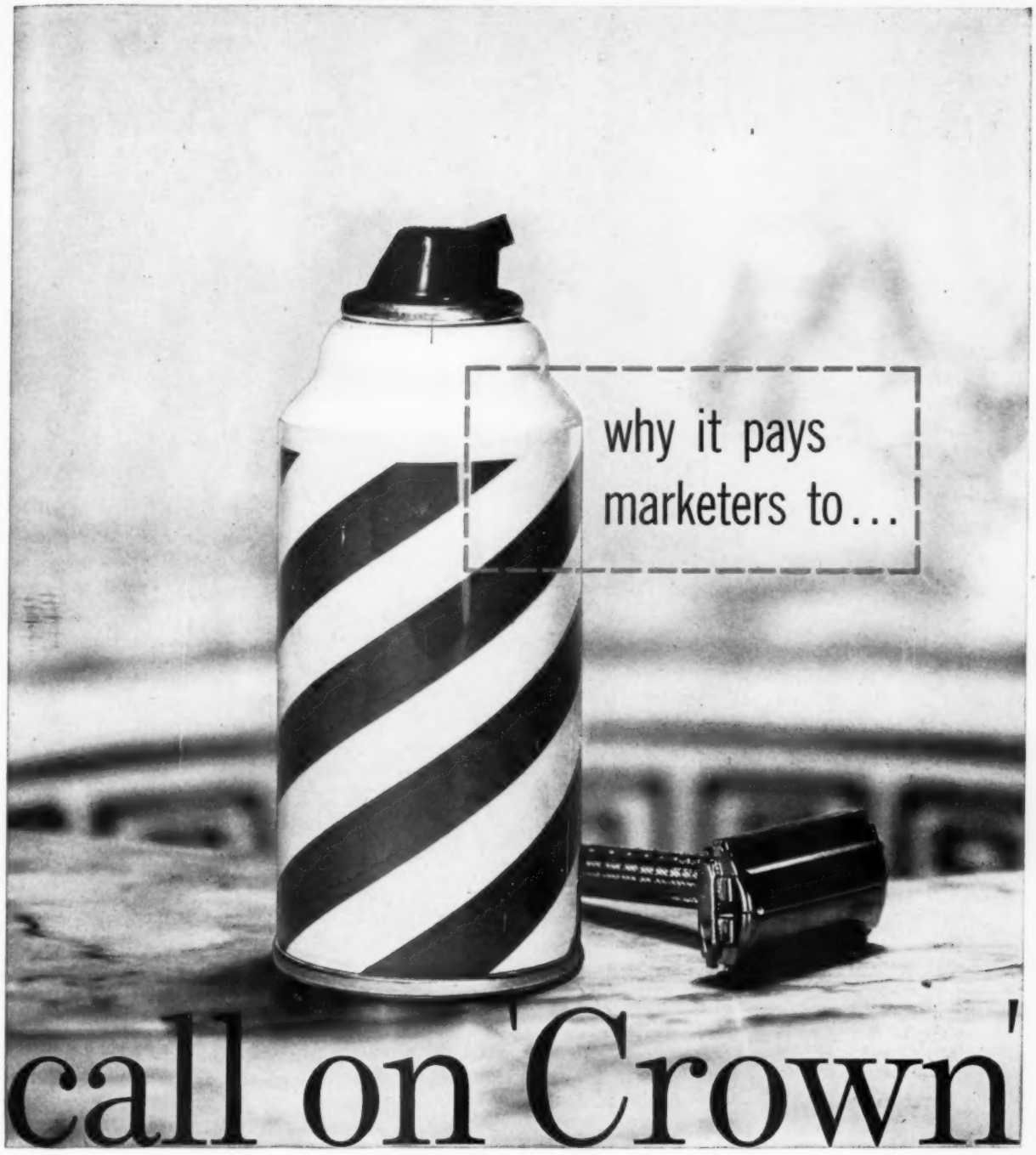

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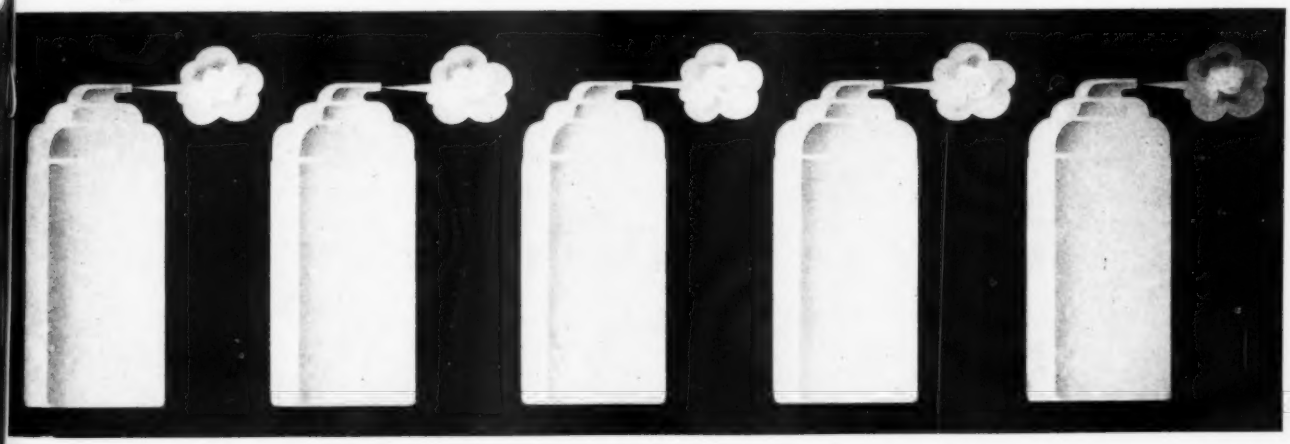

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Role of The Custom Filler

in the phenomenal growth of The Aerosol Industry

A Guest Editorial By

H. R. Shepherd

Aerosol Techniques, Inc.

THE role of the custom filler, contract loader and/or filler, whichever nomenclature one prefers, has been pretty well defined and accepted by the industries which they serve. This group had vision and confidence in the aerosol industry, and have backed up this vision and confidence by the heavy investments they have made in fixed capital equipment. That the custom filler has served as the foundation and spearhead to this phenomenal growth which has benefited the whole industry, that is, i.e., component suppliers, marketers and consumers, is a tribute to this group.

There isn't an industry, whether it be Cosmetic, Pharmaceutical, Household, Chemical, Industrial, Food, Automotive, etc., which hasn't been touched in some way by this new method of product dispensing. Every alert management, whether or not it has an aerosol product, has somewhere at some time in its deliberations and plans for the future surely considered aerosols. Having considered an aerosol package and desiring to explore its possibilities further, management has invariably sought information and advice from one of the many competent fillers who can rapidly give them the kind of information and facts on which to make more definite decisions.

Having gotten the basic information, either market-wise or development-wise, most marketers have used the facilities of the custom loader to advantage. When the marketer has developed a respectable volume, however, he sometimes toys with the idea of manufacturing the product in his own facilities. It is at this juncture that management is confronted with a decision almost as weighty and important as the original decision to enter the field from a marketing aspect in the first place.

This situation is not uncommon to other industries outside the Chemical, Pharmaceutical and Cosmetic industries. It is a situation which is so extensive that it prompted a very important research study by the Harvard University Business School and resulted in publication of an elaborate thesis on this whole situation entitled, "Make or Buy" by Professor James W. Colliton. This work is recommended not only to organizations preparing to do their own manufacturing but to custom loaders as well.

Anyone who has worked with a competent custom loader is fully aware that he not only performs a manufacturing function which must, of necessity, be more efficient and more economic than the marketer doing it himself, but he must also bring to the relationship between loader and marketer active creative talents which are constantly keeping the marketer abreast of the latest developments in the field, whether they be formulations, packaging changes, valve developments, regulatory shifts and modifications, etc. It would be foolhardy to suggest that only the custom loader can function efficiently as a manufacturer, but it should be pointed out that, should a marketer decide to do his own loading, he must not only be ready to make a large fixed capital investment in machinery and equipment (which has a terrific degree of obsolescence because of the changing package) but he

(*Turn to Page* 91)

A GOOD deal of emphasis has been placed on just how rapidly the aerosol business has grown. That is only natural. But it is unfortunate that because the focus has been on this spectacular growth other significant aspects have been largely ignored.

Success contributes to complacency. And the overall success which aerosol producers have enjoyed has lulled many into a dangerous state of complacency—one that may well prove to be costly. For it is clearly revealed in studies which my colleagues and I have made that a period of intense competition is approaching. In fact, although some aerosol marketers are not yet aware of it, both the tempo and degree of inter-brand competition is heightening. The aerosol business is taking on a new structure, a new character. It is entering a new phase.

Economists have a classic method of categorizing industries. They trace the development of any industry—be it the production of automobiles, steel, or foods—through stages. The aerosol industry, which has boomed along through Stage One, has now moved into Stage Two. But this has not been widely recognized. A few consequences are apparent to the acute observer; before too long they will be grimly apparent to all.

Let us consider the normal growth pattern customarily followed by any new industry. Perhaps the best example is the one profiled by the early days of the vacuum cleaner. A few decades ago there were several rather cumbersome ways to clean carpets. You could sweep them with a broom. You could use a carpet sweeper. Both were arduous methods; neither was very efficient.

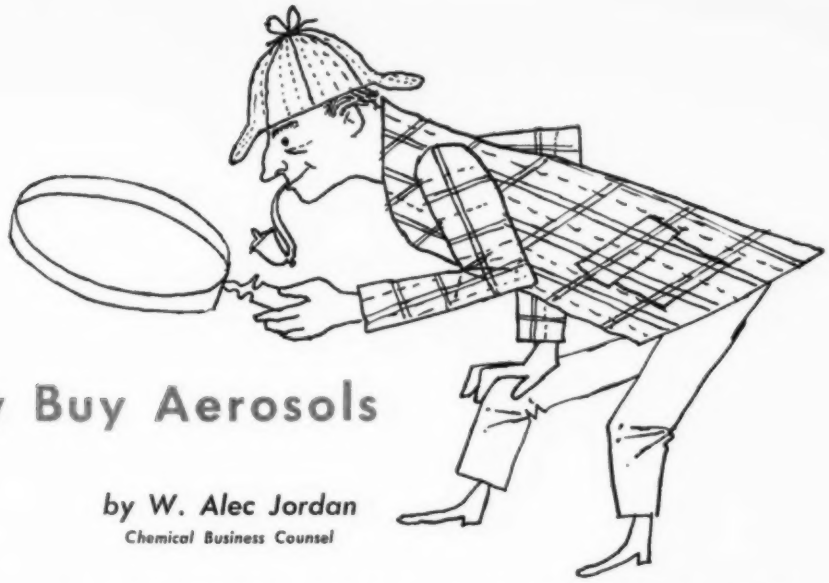
Then the vacuum cleaner was invented. This represented not just a novel appliance but a new, easier, more effective method to accomplish an end. So the manufacturers of vacuum cleaners set out to "sell" the public on the use of their new devices. Their merchandising techniques ran

the whole gamut from door-to-door selling to department store demonstrations to extensive advertising. They weren't selling *brands* as much as they were selling the idea, the principle; they were selling the vacuum cleaner *idea*.

That was Stage One. They sold the idea of using vacuum cleaners without too much difficulty, for after all the competition was not very stalwart. The cleaner had much more to offer than the broom or the carpet sweeper. Then came Stage Two. The public had "bought" the principle. One make of cleaner had to compete with another in the market place. Then it was no longer just the simple and uncomplicated selling of an idea. Rather it was a question of selling a specific brand and selling it hard.

The parallel between that industry's development—which took place several decades ago—and the course which aerosols are following is clear. It was easy to sell just about any aerosol a few years ago. Aerosols represented a new, modern and a superior way of doing things. Moreover, the basic competition was broom-like: An aerosol insecticide far out-ranked the "old-fashioned" pump gun in convenience; an aerosol spray lacquer was clearly out of the league of the prosaic can and brush. Any aerosol of reasonable quality, packaged fairly well, would sell even if the distribution it had was mediocre. Business volume bounced.

Now, and as I have emphasized it is not widely recognized, the aerosol industry is in Stage Two. That's a hazardous stage. There is going to be substantially more inter-brand competition; there is going to be vastly less latitude for any marketer who turns out mediocre quality products in uninspired packages and who ignores the basic tenets of aggressive merchandising. The only reason that the troublesome undercurrents which threaten the progress of individual brands have not been more evident is that the continued introduction of new products — new *types* of products — has camouflaged the true situation. The zest behind the promotion of a jet-spray window cleaner, for example, conveys impetus to the whole industry.



Why They Buy Aerosols

by W. Alec Jordan
Chemical Business Counsel

During the past several months we have studied a number of aspects of the aerosol industry. We have been endeavoring to ascertain how the future of the industry is developing, what trends are welling up and what their outcome will be. Correspondingly, we have been analyzing and appraising consumer needs, attitudes, and motivations. It is some of these observations that we should like to present here. And may we now acknowledge our appreciation of the permission granted by our clients to do so. They have allowed us to set forth a few of the general features derived from some confidential studies.

We should like to emphasize, however, that this does not pretend to be a thoroughly detailed report. Our space is limited and we have for these and other reasons limited our discussion of certain depth factors, brand ratings as well as such aspects as purchasing influence, distribution channels, packaging concepts, and so forth. Our remarks have been confined instead to a profiling of principles which might be of utility to any producer or marketer of aerosols. This is a picture painted with a broad brush. But what it suggests will we hope be informative and thought-provoking. The data was derived from personal interviews. These were what the psychologists refer to as "unstructured open-end interviews." In other words every effort was made to avoid conditioning the responses of those interviewed and the interviews were conducted in a casual, informal manner designed to bring out the actual opinions of the subjects. The interviews were conducted by workers trained in psychology, and the transcripts were analyzed and evaluated by professional psychologists.

Why They Buy

FIRST of all let's examine some of the positive aspects disclosed in these interviews. Then we can dissect some of the negative.

People buy for many reasons and the words they use to explain their actions are just one of the clues to an understanding of purchasing behavior. The fundamental contribution of modern psychologists is just this—that man is unaware of the many forces governing and directing his behavior. The words he uses to explain himself to himself and to others are frequently rationalizations and unconscious deceptions which camouflage inner dynamics.

These words are the reasons given and they must be analyzed by experts trained in the understanding of human behavior. The experienced industrial psychologist takes those words and those expressions, sifts them in his mind, relates them to previous knowledge and cuts through to the real reasons. Words can be important tools to understanding, but must first be set against an adequate background of psychological knowledge.

It is of vital consequence, of course, that careful and competent analyses be made of the interviewees' responses. For as we have suggested, people seldom really know just why they do anything. To take what they say at face value, to regard it as the essential truth, is to toy with folly.

Take, for instance, automobile purchases. Query most people on their car buying habits and you'll encounter some of the clearest, most rational and logical assertions as to why they bought. Many will insist that they bought a new car because it was a good time of year to trade, the old model was unreliable, the paint was fading, etc., etc. Those are the easy-to-discover pseudo reasons. The real reasons, stemming by and large from the emotions, are discernible only by depth interrogation.

The business world is replete with cases of enterprises which crumbled because the simple conclusion was so very easy to reach. A prime example is the car maker who was persuaded that people know what they want and why — and are willing to say so, literally. He made a car shorter (for easier parking) and with lower horsepower (for economy). It turned out to be "no contest" with the longer

(harder to park), more powerful (less economical) and lower (more difficult to get into) models of his competitors. His was an expensive lesson in human nature and the complexities (and simplicities) of human purchasing behavior.

Top ranking item in the aerosol business for some years now has been insecticides. Last year they accounted for nearly 56 million units or something like 23% of the industry's overall production. Hair sprays sold to the tune of about 53.7 million units and shave lather ran in the 45 million unit range. Because these products represent such a substantial share of the market, we will devote the major part of our discussion to them.

Insecticides

ALTHOUGH no generalization is completely true, it is, in my opinion, fair to say that the aerosol principle is most appropriately used for insecticides. To put it another way, the characteristics which aerosols have and the image which consumers have in mind when they purchase insecticides are in rather close harmony. There is very little discord in imagery as there is, for instance, when we consider aerosol cosmetics.

It is perhaps significant that the word "bomb" was very often used in the conversations of many of those whom we interviewed. Having introduced the word itself when the first wartime aerosol insecticides were being made some twelve or thirteen years ago, the aerosol industry now seems to be stuck with this unfortunate term until it can substitute a more appropriate one. Although low pressure containers have long since superseded the original high-pressure "bombs," subconsciously, at least, many people apparently still think of aerosols as "bombs." That's a word which carries a strong connotation of power, of dynamic force, of strength. And these are obviously concepts that people have in mind when they buy an insecticide. It must have power to destroy unwanted pests. So "aerosol" and "bomb" and "insecticide" fit into a harmonious pattern. It's a kind of emotional synergism. Together they inspire and bolster the impulse to buy.

I might say, parenthetically, that this "bomb" image may on the other hand impair sales of a shave lather. There is at least one preparation on the market which is boldly labeled as a shave "bomb." It would not be prudent to render a judgment on this because we have not made depth analysis in this particular area; but the question might well be raised as to whether this is a wise or unwise terminology and one which encourages or discourages purchases. I am inclined toward the latter view.

Those aerosol characteristics — power and force — outweigh almost all other considerations in the composition of consumer attitudes as far as insecticides are concerned. And not only do people feel that aerosols are powerful, but they also think that they are modern and efficient.

Consider just how much heed is given to the power concept. Here are a few interview responses which mirror, and perhaps rather brutally, some human emotions: ". . . I can aim it into the air at buzzing insects, and I can knock them down. It gives me a great deal of satisfaction from knocking them down, not just eliminating them but killing them . . ." ". . . I have a real sense of power . . . I aim the spray at the fly . . . I keep spraying until the fly is dead" ". . . You can follow flies around until you kill them, I feel commanding . . . I feel like a hunter . . . I love to push the button . . . it amuses and amazes me . . ." ". . . It's sort of adventurous. I feel as if I have a gun in my hand or perhaps a hand grenade."

There is some suggestion and considerable justification for the belief that insecticides have been bought for their novelty. They are novel — and a reasonable degree of novelty still is attached to them. (Even though it is waning.) Their purchase carries with it a certain element of being modern, and keeping up with the Joneses (Perhaps you can't afford the latest model car, but you can still buy the ultra-new in insecticides). It also carries an element of satisfaction derived from the sense of having power. One of the basic fundamentals of psychology is that people relish power. But it is equally true that they fear power and especially unbridled power.

One is a plus factor as far as aerosols are concerned. But the fact that sometimes this power appears to be uncontrollable disturbs some people, arousing an uncomfortable anxiety. Some subjects interviewed, for instance, expressed concern that aerosols are dangerous to have around the house, because they might be used injudiciously by children, or they can harm children. After all, guns have safety catches. Aerosol marketers might ponder the sales attributes of a similar device.

Apart from those considerations, aerosol insecticides meet with rather general approbation. Their convenience index is certainly high, and users are aware of the ease of application. They dwell too upon such matters as storageability. There is only one container to store — not two. In addition, many are conscious of the "less messy" nature of the aerosol insecticides. There is no spillage because there is no need to transfer the liquid from a container to a sprayer. Too, the misadventures — such as the occasional coarse or sodden spray of the pump gun — are eliminated.

Strangely enough the hissing sound of an aerosol in action is stimulating and satisfying to a proportion of users. It connotes action; it mirrors power; it carries the stimulus of commanding.

A good deal of attention has been paid to pricing — and properly so — although this is not as important a factor as some may think. As one respondent said, "I think that the thought of ridding the house of insects eliminates any rational comparison of costs." That is an observation which merits thoughtful consideration.

There are, naturally, economic truths which must be evaluated intelligently in terms of the competitive nature of the market place and of the economic strata which represent the greatest purchasing potential. But, by and large, personal insecticide purchases do not loom large in terms of

annual expenditures in any part of the United States. (In a tropical pest-ridden region cost would be of a different order.) Consequently any insecticide producer who concerns himself too intently with such arithmetical and rational facets — if in doing so he overlooks or minimizes the import of emotional factors — may well deceive himself. And his sales program will be thwarted.

As often as not it is the "little things" that spur purchases. Even perhaps such little things as the comment of one interviewee who used an aerosol to spray clothes prior to storage that "It's the modern way to do things; it saves me from taking moth balls from the suit pockets!"

The elements of motivation are often strange, seldom singular and frequently relatively obscure to the casual observer. But they are potent.

Hair Sprays

LARGE as the sale of hair sprays has been, there is an area of discontent with the products which warrants prompt action. Unfortunately those who have been dissatisfied with the results of a single purchase carry their resentment over to the entire field of aerosols. It isn't just hair sprays that they condemn; they also disparage all aerosol products.

What we encounter most frequently is really a feeling of disappointment. A woman has read advertisements or seen TV demonstrations and has become persuaded (consciously or unconsciously) that the hair spray will impart beauty to her, new appeal, and a scintillating happiness. In all realism she may know that this is an expectation that falls outside the realm of probability. But the sales promotion promises her that, and that is what she would like to believe. So "believe" it she does. When the spray falls short of fulfilling all these dreams, she is resentful.

Among the major strengths or sales appeals that sprays have is their neatness. That's the word that women use most when talking about hair sprays. They say that hair spray is easy to use, is a neat procedure (they don't have to pour material from a bottle into an atomizer). It gives them a neat head of hair. Moreover they can spray their hair evenly — on all parts of the head.

The scent also relays an extraordinary impact. There are very few women who do not remark on the scent or the perfume. They mention it with the enthusiasm which perfumes have long aroused. A good perfume is associated directly with luxury, and a pleasantly scented hair spray is a rather inexpensive way to luxuriate.

In addition, and few women consciously recognize this, using aerosol hair sprays enables them to indulge themselves in a luxury without being burdened by the guilt feeling which sometimes accompanies extravagance. They decide that a hair spray is functional and necessary. So there is every justification for purchasing it without feeling wasteful.

However, some sensitive women — that is sensitive to this feeling of extravagance or waste — do complain that a lot of spray "goes in the air and is wasted." Perhaps the valve makers might consider adjustable valves. They would perhaps prove satisfying to some consumer types. Too, as we mentioned in the insecticide discussion, people fear unbridled power. Adjustable sprays or adjustable valves could be unique sales ammunition.

The major complaint levied against hair sprays is that they leave the hair sticky, stiff and unnatural looking. This observation is more prevalent than should obtain for the industry's health. In part, of course, it may stem from incorrect formulations or from over-zealous and indiscriminate use on the part of some purchasers. One woman interviewed by our researchers had suffered what we might loosely term a poignant case of psychological distress. Said she: "I don't like looking sloppy, so I looked for something that would cure this problem. I bought a spray, but it made my hair look like cardboard. In fact it didn't do anything except keep my hair in place. Guess this is what it was supposed to do . . . but once my hair was in place even I couldn't get it out of place. When I walked down the street and everyone else's hair was blowing, my hair just laid there like cardboard." That, even with the shades of humor which it has, also carries a serious message. There was a user who was upset because she didn't conform. Everyone else's hair was blowing around and her hair wasn't. That's adequate reason for mental discomfort.

There is more than a little significance, incidentally, in her remark ". . . all it did was keep my hair in place . . ." She had expected more.

W. Alec Jordan, formerly editor of *Chemical Week* and now a chemical business consultant specializing in marketing, makes available to readers of *Aerosol Age* in this article the results of extensive marketing studies to check consumer reaction to and satisfaction with various types of aerosol products. Mr. Jordan was educated in Canada, with degrees in chemistry from McMaster and McGill Universities. He had extensive experience in chemical research and development, technical service and sales with several Canadian chemical companies before coming to the United States in 1946 as news editor of *Chemical Industries*. He became progressively managing editor, business manager and editor, and when the publication was acquired by McGraw-Hill was named editor-in-chief of *Chemical Week*, a post he held for five years. He resigned early this year to enter the consulting field, specializing in such aspects of marketing as product development, product promotion public relations and market analysis. Mr. Jordan will do a series of articles for *Aerosol Age* on various aspects of aerosol marketing.

She had been disillusioned. As a result she condemned aerosols in general. The odds are that some effusive copywriter had turned out an advertisement that over-promised and oversold. Harm had been done to a brand name and harm had been done to an industry. Of greater significance is that this attitude is not confined to a few women, nor to a few localities. For women are notorious communicators! Their negative feelings can affect the other purchases that their family, friends and shopping companions may be considering.

Shave Lathers

ASK any group of men what kind of beards they have and a preponderant number will volunteer the information that they have "tough" beards. It seems to be the masculine way to be. Even if a man's beard is essentially no more than fuzz, he'll assert that it is a tough, wiry, unusual beard. Men nurture rugged opinions about beards, some peculiar misconceptions and equally rugged views about shaving methods. That's why in evaluating the attitudes which men have toward shaving products a good deal of prudent judgment and psychological experience must be employed if the interpretations are to be valid.

When it comes to aerosol lather the attitudes run the gamut from enthusiasm to thorough disdain. The one school — and by and large it is the younger age group — is an outspoken advocate of all that is modern and new and efficient. They talk about the speed (. . . "I don't have to take time to squeeze a tube and whip up a lather with a brush. I just push the button and there it is. The white foam has a sanitary look and it smells nice . . .").

Some also bestow a degree of masculinity or virility upon "this modern method." (The association with advertising in which athletes have appeared has been a strong influence.) That underlying sense of power, which we mentioned earlier, juts out again and again in one guise or another.

If you were to take all the adjectives that the in-favor group use, it would include such words as novel, amusing, amazing, fast, efficient, convenient. (Even "quiet" has its influence. "No roaring and buzzing of an electric shaver in my ears at that time of the morning. . . .")

But you could hear some equally monolithic views voiced by the opposition. They will assert that a brush and a mug seem "more dignified" and that economy and effectiveness are on the side of their shaving preparations. And some of them abhor the thought of hurrying. ("When I'm shaving is about the only time I have to myself . . . that's when I get my best ideas. I don't want to have that nice relaxing early morning shave accompanied by whooshes, glugs, fizzes and pops. I'm just not in that much of a hurry.") That tactile sensation, the rubbing of a brush over the face, is also relished by some men. They assert, too, that they feel they are "doing something." The idea of being lazy and having things done for them by some trick mechanism is apparently unwelcome to some men. So much of life's activities on the job are removed from personal control and personal achievement that men cling tenaciously to this one little island of individual accomplishment. The brush and the "do-it-yourself" kit may be in their minds, one of the last bulwarks against the encroachment of a mechanistic age.

However, convenience is a factor of substantial stature. The aerosol lathers win broad approval for traveling. They pack easily and they're simple to use whether the water is hard or soft. Even those who are the staunchest supporters of the straight razor, the brush and mug, electric razor or the brushless shaving cream nod in approval of the canned lathers for traveling. But that doesn't mean that they are true converts. They seem to give ground rather grudgingly and to cherish the "conventional" way of doing things. So, at least, it is with certain age groups.

Habit patterns in this arena are not easily changed, though changes certainly have been effected and more changes can be effected, if fitting attention is paid to male idiosyncrasies; or perhaps more pointedly, if less confusion obtained and less theorizing were done concerning men's emotions and motivations. Those who temper their theories with facts are assured of profit. Those who flout the factual approach certainly comfort their competitors.

Each of the types of products we have discussed has its strengths and its weaknesses. And we are not talking in terms of formulation, but of market acceptance and market promise. Overall there is a common denominator of factors which will determine the future stature and structure of the aerosol industry. This is not to suggest that the promise — for the entire industry — is anything but rosy. It is to imply, however, that a new era in aerosol marketing is already in existence and that much keener competition among brands is in prospect. We have cited the early "vacuum cleaner" days — the days when an aerosol sold simply because it was novel and superior to the rather unimaginative products which preceded it on the market. In those early days just about anyone could set up and sell an aerosol product. Circumstances were in his favor. Now it is different — and in the days ahead it is going to be increasingly different. This prediction, we believe, is particularly true for the three large volume (and economically mature) items we have discussed.

To ignore some of the principles of marketing was possible and permissible even a year or so ago. The general growth of the industry, the comparative novelty of the product, the appreciable superiority of the aerosol concept over earlier packaging and dispensing methods, were of adequate enough substance to overwhelm (or disguise) any failings on the part of individual enterprises. That won't be the case from here on.

Brand will be battling brand. Distribution systems will have to be economically competitive to survive. Packaging, filling, labeling, all will have to come under scrutiny. The immediate and long term profits will accrue to those who pay close heed to the needs of consumers, to the attitudes they harbor, to their vagaries

(*Turn to Page* 96)

Low-Pressure Insecticidal Space Sprays

By J. H. Fales, R. A. Fulton, and O. F. Bodenstein
Entomology Research Branch, Agr. Res. Serv., U.S.D.A.

LOW-PRESSURE aerosols for use against household insects were introduced to the public in the fall of 1947. The main difference between these and high-pressure aerosols is the substitution of approximately 50% of the propellant 12 (dichlorodifluoromethane) with propellant 11 (trichloromonofluoromethane). Propellant 12 has a gage pressure of approximately 65 p.s.i. and propellant 11 of 12 p.s.i. at 70°F. These compounds when mixed on an equal-weight basis give a gage pressure of approximately 38 p.s.i. Methylene chloride and a number of other chlorinated and chlorofluoro hydrocarbons are being used to suppress the pressure of propellant 12. For labeling of insecticidal aerosol mixtures such compounds have been considered as propellants.

Lubricating oils, deodorized kerosene and aromatic and other solvents have been considered as part of the nonvolatile portion of low-pressure aerosols. To obtain the correct particle size it was necessary to use less viscous solvents and oils. Aromatic petroleum derivative solvents with a boiling range of 300°-650° F. and deodorized kerosene were selected. As a result of the early work the industry accepted and still uses these approved solvents. It was realized that the amount of kerosene that could be used would become an important factor as competition increased, because kerosene is cheaper than the propellant. The results of a study with increasing amounts of deodorized kerosene and decreasing amounts of the standard 1:1 mixture of propellants 11 and 12 were published in 1949 (*1*).

Recently (2) there has been considerable interest in a formula in which the propellant 11 has been replaced with an equal amount of deodorized kerosene. This type formulation produces larger spray particles than the standard insecticidal aerosol which has 80% of the particles 30 microns in diameter or less and no particles greater than 50 microns (*3*), and is called a low-pressure space spray. A study of the effectiveness of this type of spray in comparison with aerosols and ordinary space sprays is described in this paper.

Except where stated all the testing against insects was done in a Peet-Grady chamber by standard CSMA procedures (*4, 5*). The insects used were the house fly (*Musca domestica* L.), the common malaria mosquito (*Anopheles quadrimaculatus* Say), and the yellow-fever mosquito (*Aedes aegypti* (L)). In all the chamber tests the *up* as well as the knocked-down insects were collected and the dead from both constituted the mortality count. The particle-size data were obtained by the method described by Yeomans (*6*). All the formulations tested are shown in table 1.

Data obtained against house flies with kerosene sprays containing pyrethrins-DDT or DDT alone applied at pressures of 100 and 50 p.s.i. as well as the usual 12.5 p.s.i. are given in table 2. The respective mass median diameters of particles in sprays of this type when atomized at the three pressures are: 10-18, 18-25, and 30-40 microns. The highest knockdowns and kills were obtained at 50 p.s.i., which caused a particle-size range close to aerosols. The Official Test Insecticide (OTI), pyrethrins 1 mg./ml., was also tested.

The results of tests by Nelson *et al.* (*1*) with aerosol formulations containing 2% each of pyrethrum and DDT and various percentages of propellants 11 and 12 are shown in table

TABLE 1

PERCENTAGE COMPOSITION OF AEROSOL (*) AND SPACE-SPRAY FORMULATIONS TESTED.

Component	OTA*	G-1170	G-1171	G-812*	G-1180	G-1059*	G-1174	G-1073*	G-1175	G-1178*	G-1179	G-1043*	G-1181	G-1176*	G-1177	G-1182	G-1183	G-1184	G-1185	G-1186
Pyrethrum extract (20%)	2	2	1	1.25	1.25	.5	.5	1	1	—	—	—	—	1.25	1.25	2	2	2	2	2
Allethrin	—	—	—	—	—	—	—	—	—	.2	.2	.1	.1	—	—	—	—	—	—	—
DDT	2	2	1	—	—	2	2	—	—	2	2	1	1	—	—	2	2	2	2	2
Methoxychlor	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—
Perthane	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strobane	—	—	—	—	—	—	—	2	2	—	—	—	—	2	2	—	—	—	—	—
Lethane	—	—	—	—	—	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—
Thanite	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—
Piperonyl butoxide	—	—	—	2	2	.5	.5	.8	.8	—	—	—	—	.75	.75	—	—	—	—	—
Sulfoxide	—	—	—	—	—	—	—	—	—	1.6	1.6	—	—	—	—	—	—	—	—	—
MGK 264	—	—	—	—	—	—	—	—	—	—	—	.17	.17	—	—	—	—	—	—	—
Petroleum derivatives	6	—	—	—	—	5	—	6	—	6	3	6	3	—	—	—	—	—	—	—
Deodorized kerosene	5	51	53	11.75	51.75	10	50	5.2	51.2	10.2	48.2	10.73	48.73	16	51	25.5	12.75	56	61	66
Methylene chloride	—	5	5	—	5	—	5	—	5	—	5	—	5	—	5	5	5	5	5	5
Propellant 11	42.5	—	—	42.5	—	40	—	42.5	—	40	—	40	—	40	—	25.5	38.25	—	—	—
Propellant 12	42.5	40	40	42.5	40	40	40	42.5	40	40	40	40	40	40	40	40	40	35	30	25

TABLE 2

COMPARISON OF SPRAYS CONTAINING PYRETHRINS-DDT AND DDT DISPENSED AT DIFFERENT PRESSURES BY THE PEET-GRADY ATOMIZERS: TESTS AGAINST HOUSE FLIES.

Pressure (psi.)	Dosage (ml./1000 cu. ft.	% Knockdown in— 5 minutes	% Knockdown in— 10 minutes	% Kill in 1 day
Pyrethrins 0.1%, DDT 0.1% (4 tests)				
12.5	41.7	..	93	88
50	41.7	..	99	98
100	41.7	..	97	87
12.5 OTI	41.7	..	87	35
	55.6	..	97	45
Pyrethrins 0.4%, DDT 0.4% (6 tests)				
12.5	9.26	70	80	76
50	9.26	86	93	88
100	9.26	79	85	79
12.5 OTI	55.6	94	95	33
DDT 5.0% (4 tests)				
12.5	1.16	5	47	76
50.0	1.16	3	40	89
100	1.16	2	27	80
12.5 OTI	55.6	91	94	54

TABLE 3

COMPARISONS OF LOW-PRESSURE AEROSOLS WITH DIFFERENT PORTIONS OF VOLATILE AND NONVOLATILE COMPONENTS; TESTS AGAINST HOUSE FLIES AT 1.16 GRAMS PER 1000 CU. FT. (6 TESTS). FROM NELSON ET AL (1).

Propellants 11 and 12 (1:1) (%)	Deodorized kerosene (%)	Particle diameter (microns) Mass median	Particle diameter (microns) Largest particle	% Knockdown in 15 minutes	% Kill in 1 day
90	0	9.5	25	35	71
85	5	10.1	25	31	72
80	10	15.2	40	29	67
78	12	17.0	40	20	57
75	15	17.1	40	19	53

3. As the volatile matter was decreased by the addition of deodorized kerosene the particle size increased. There was a sharp increase in the size of the largest particles when the propellant was 80% or below and sharp decreases in knockdown and kill when it was 78% or below.

A formula that contained the same active ingredients as the Official Test Aerosol (OTA) was prepared by using 51% of deodorized kerosene, 5% of methylene chloride, and 40% of propellant 12 (G-1170). A similar formulation with half as much pyrethrum and DDT was also prepared (G-1171). When applied at two dosages from containers equipped with a commercially available metal-diaphragm aerosol valve, these modified formulas were not much less effective than the OTA (fig. 1, pg. 38). Results obtained with the OTI are also shown. The mass median diameter and the diameter of the largest particle obtained with G-1170 were 29 and 52.4 microns, respectively, and with G-1171, 27 and 55.8 microns. Those for the OTA are shown in table 4.

Formula G-1170 was tested when dispersed through eleven different plastic valves. On the basis of the the spray rate, particle-size, and biological results given in table 4, valve No. 1 performed satisfactorily. This is a commercially available valve that has

a reverse taper button with an 0.018-inch outer orifice, an 0.022-inch orifice in the nylon body, and an 0.018-inch metering orifice in the brass stem. Six other space-spray formulations were made up and dispensed from this valve to determine whether they would be as effective as in aerosol form. The OTA and G-1170 were compared with them in two series of tests against house flies. As shown in table 5, there was some reduction in mortality with the space sprays, but in general their performance was close to that of the aerosols.

In tests against the common malaria mosquito G-1170 compared favorably with the OTA in knockdown and kill after a 5-minute exposure in the Peet-Grady chamber. The two formulations gave equal control of house flies as well as malaria and yellow-fever mosquitoes, when compared in a 2160 cubic foot room.

Since G-1170 appeared to be nearly as effective as the OTA when dispensed with a well-designed aerosol valve, the effect of reducing the propellants by substituting deodorized kerosene was studied, with house flies as the test insects. Replacing one-fourth and one-half of the propellant 11 in the OTA with kerosene caused no loss in performance (table 6). There was a gradual reduction in effectiveness as the propellant 12 in G-1170 was replaced by kerosene (table 7). However, a more definite breaking point was obtained when the kerosene was substituted for the 1:1 mixture of these propellants (table 2). Because of the physical properties of these solutions it was difficult to determine the particle size.

In 26 comparisons against house flies G-1170 was 8% less effective than the OTA in 15-minute knockdown and 6% less effective in 1-day kill (table 8).

These studies show that the particle size is increased when the volatile content is decreased by adding deodorized kerosene in formulas containing a 1:1 mixture of propellants 11 and 12. The size of the particles increases sharply when the propellant mixture is 80% or below, and the knockdown and kill of house flies are reduced when it is 78% or below. However, when deodorized kerosene is substituted entirely for propellant 11 and the propellant 12 remains constant, and when the formulation is used with a well-designed valve, the nonvolatile content may be increased to 60% without marked loss in effectiveness against house flies and mosquitoes. A suggested standard for evaluating low-pressure space sprays of this type against house flies is formula G-1170. Until the presently used particle-sized method is im-

TABLE 4

COMPARISON OF SPRAY RATES, PARTICLE SIZES, AND BIOLOGICAL PERFORMANCES OF G-1170 LOW-PRESSURE SPACE SPRAY DISPERSED THROUGH ELEVEN DIFFERENT VALVES WITH THE OTA; TESTS AGAINST HOUSE FLIES. (2 TESTS.)

Valve No.	Dosage (grams/1000 cu. ft.)	Spray rate (grams/second)	Particle diameter (microns)		% Knockdown in—			% Kill in 1 day
			Mass median	largest particle	5 minutes	10 minutes	15 minutes	
			Series I					
1	3.70	1.06	24	48.6	20	42	48	84
2	3.66	1.22	25	53.4	11	15	21	62
3	3.66	1.05	26.5	51.2	22	38	58	70
4	3.43	.87	24	53.4	24	29	43	78
5	3.61	.74	26	51.2	16	28	34	75
OTA	3.47	.72	17.7	49.3	8	18	36	86
			Series II					
6	3.74	1.28	24	54.6	42	54	62	90
7	3.70	.97	28	53.4	19	32	38	80
8	4.26	1.20	32	54.6	38	48	52	85
9	3.89	1.24	26.5	51.2	25	38	40	78
10	4.07	1.31	28	42.7	32	44	50	82
11	3.66	1.28	28	52.4	21	39	46	84
OTA	3.43	.72	17.7	49.3	23	39	52	84

TABLE 5

COMPARISON OF AEROSOLS AND LOW-PRESSURE SPACE SPRAYS CONTAINING THE SAME ACTIVE INGREDIENTS; TESTS AGAINST HOUSE FLIES. (3 TESTS.)

Formula	Dosage (grams/1000 cu ft.	% Knockdown in—			% Kill in 1 day
		5 minutes	10 minutes	15 minutes	
	Series I				
Aerosol, G-812	4.40	48	80	89	91
Spray, G-1180	4.68	45	62	75	67
Aerosol, G-1059	4.54	4	30	71	97
Spray, G-1174	4.26	25	44	71	96
Aerosol, G-1073	4.49	31	63	74	85
Spray, G-1175	4.49	34	59	72	68
Aerosol, OTA	4.35	35	56	63	94
Spray, G-1170	4.35	40	52	57	87
	Series II				
Aerosol, G-1178	4.26	20	45	76	93
Spray, G-1179	4.26	29	44	57	82
Aerosol, G-1043	4.17	32	65	89	98
Spray, G-1181	4.72	45	66	80	91
Aerosol, G-1176	4.68	29	54	71	80
Spray, G-1177	4.72	29	52	68	76
Aerosol, OTA	4.21	29	46	60	94
Spray, G-1170	4.31	26	40	47	81

proved, it will be necessary to base all comparisons on biological tests.★

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(4) Chemical Specialties Manufacturers Assoc. 1955. The Peet-Grady Method. Blue Book, Soap and Chemical Specialties, 28th ed., pp. 249-250, 267.

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Du Pont Issues New Booklet

Package for Profit, a 46-page illustrated booklet containing information about the expanding aerosol market, has been issued by the Kinetic Chemicals Division of E. I. du Pont de Nemours & Co., Inc., Wilmington, Delaware. Among other things, the booklet gives (1) the history and growth of aerosols, (2) hints on how to develop an aerosol package and enter the market, (3) data on Freon propellants, and (4) an up-to-date list of valve and container suppliers and aerosol loaders.

The booklet is an enlargement on DuPont's original 1951 edition, and also contains a number of charts depicting consumer preference for aerosols, total number of units packed through 1955, and others tracing the sharp rise in the entire industry.

In a special products section each of the major and minor product types is discussed as to formulation, characteristics, etc. A special appendix is included, containing patent listings, and all of the foreign and domestic contract loaders, valve, and equipment makers on record.

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Shulton Appoints Kline

Dr. Charles H. Kline has joined Shulton, Inc., New York, as scientific director. He had been manager of the chemical development division of Climax Molybdenum Co., New York.

TABLE 6

EFFECT OF SUBSTITUTING DEODORIZED KEROSENE FOR ALL THE AROMATIC PETROLEUM DERIVATIVE SOLVENT AND VARIOUS AMOUNTS OF PROPELLANT 11 IN THE OTA; TESTS AGAINST HOUSE FLIES. (6 TESTS.)

Formulation	Propellant 11 (%)	Deodorized kerosene (%)	Particle diameter (microns)		Dosage (grams/1000 cu. ft.)	% Knockdown in			% Kill in 1 day
			Mass median	Largest particle		5 minutes	10 minutes	15 minutes	
OTA	42.5	5	17.7	49.3	4.82	32	49	58	90
G-1183	38.25	12.75	18	45.4	4.72	33	56	60	92
G-1182	25.50	25.50	32	71.7	4.49	32	50	59	90
G-1170	0	51	29	52.4	4.82	29	42	48	86

TABLE 7

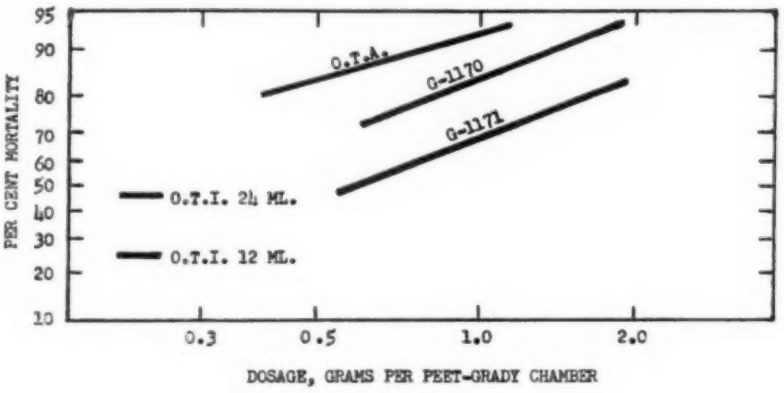
EFFECT OF SUBSTITUTING DEODORIZED KEROSENE FOR VARIOUS AMOUNTS OF PROPELLANT 12 IN G-1170; TESTS AGAINST HOUSE FLIES. (6 TESTS.) . .

Formulation	Propellent 12 (%)	Deodorized kerosene (%)	Dosage (grams/1000 cu. ft.)	% Knockdown in—			% Kill in 1 day
				5 minutes	10 minutes	15 minutes	
G-1170	40	51	4.77	32	47	51	86
G-1184	35	56	5.00	23	37	42	82
G-1185	30	61	5.37	24	32	35	78
G-1186	25	66	5.46	20	26	26	67
OTA	42.5	5	4.61	28	40	56	90

TABLE 8

COMPARATIVE EFFECTIVENESS AGAINST HOUSE FLIES OF G-1170 LOW-PRESSURE SPACE SPRAY AND OTA. (26 TESTS.) . . . . . .

Formulation	Dosage (grams/1000 cu. ft.)	% Knockdown in —			% Kill in 1 day
		5 minutes	10 minutes	15 minutes	
G-1170	4.23	26	39	45	82
OTA	4.13	26	41	53	88



Crown Appoints Regnier

W. D. Regnier has been appointed division manager of sales of the machinery division of the Crown Cork & Seal Co., Inc., Philadelphia, to succeed Ralph E. Costa, who resigned recently. Mr. Regnier had been manager of customer service in machinery sales in the crown and closure division of the company, and prior to that was sales manager of packaging machinery in the machinery division. He joined the company in 1940.

Harry E. Peterson Named to Head CSMA; Presentation of Awards Scheduled for Tuesday Noon

AEROSOLS in insecticides, pharmaceuticals, cosmetics, and automotive products will highlight the program of the Aerosol Division at the 43rd annual meeting of the Chemical Specialties Manufacturers Association at Washington's Mayflower Hotel, Dec. 3-5. The division will meet on successive afternoons, on Tuesday, Dec. 4 and in a joint meeting with the Automotive Division on Wednesday, Dec. 5.

Also scheduled for Tuesday is the presentation of awards in the annual CSMA Aerosol Package Competition, which will take place at a special luncheon. (See page 74C.)

Among the topics to be discussed are "Water Based Aerosols," "Analysis of Volatile Aerosol Constituents," both on Tuesday, and the annual "DuPont Survey on Aerosols," which will highlight the Wednesday afternoon session.

Harry E. Peterson, Peterson Filling & Packaging Co., Danville, Ill., last month was nominated as president of the CSMA by the association's nominating committee. He headed a list of nominations that included James E. Ferris, Hooker Electrochemical Co., Niagara Falls, N. Y., for first vice-president; Donald M. King, Masury Young Co., Boston, second vice-president; P. C. Reilly, Reilly Tar & Chemical Corp., Indianapolis, treasurer; and H. W. Hamilton, CSMA, who was named for reelection as secretary.

Charles E. Beach
Chairman of the Aerosol Division

To succeed the members of the board of governors whose terms expire in December, the committee nominated Dr. E. G. Klarmann, Lehn & Fink Products Corp., New York, retiring president: Anton E. Budner, S. C. Johnson & Son, Inc., Racine, Wisc. and Russell G. Puhle, Tykor Products Division of The Borden Co., New York.

The nominating committee, headed by H. W. Moburg, recommended that in the future the president and vice-presidents be nominated on the basis of one year instead of the previous two-year terms. This recommendation was made at the urging of the retiring president, who advised that the term of service is too long. A period of approximately six years is involved in working up to the office of president, and serving two years in that capacity. Including three years on the board of governors, he pointed out, the president must put in approximately nine years of continuous service.

The three retiring members of the board of governors are D. J. Templeton, Clarence L. Weirich, and T. B. Welsh.

PROGRAM

AEROSOL DIVISION

Tuesday Afternoon, December 4

Address of Chairman of Aerosol Division, Charles E. Beach, John C. Stalfort & Sons, Baltimore.

"A Review of the Aerosol Scientific Committee's Activities" by William E. Baulieu, Chairman, Bridgeport Brass Co., Bridgeport, Conn.

"Insecticidal Performance of Strobane Aerosols as a Function of Particle Size and Formulation of Sprays" by Dr. John C. McCool, B. F. Goodrich Research Center, Brecksville, Ohio.

"Analysis of Volatile Aerosol Constitutents" by Morris J. Root and M. J. Maury, G. Barr & Co., Chicago.

"Water Based Aerosols," Lee D. Callans, General Chemical Division, Allied Chemical & Dye Corp., New York.

AEROSOL and AUTOMOTIVE DIVISION

Wednesday Afternoon, December 5

H. G. MacIntosh, Standard Oil Co. of Indiana—Chicago presiding for the aerosol topics.

"Pressurized Packages for Automotive Uses," J. M. Kimmel, DeMert & Dougherty, Inc., Chicago.

"DuPont Survey on Aerosols" by R. A. Crane, Manager of Market Research, Kinetic Chemicals Division, E. I. duPont de Nemours & Co., Wilmington, Del.

"Fragrance in Aerosols," A. Dingfelder, Felton Chemical Co., Brooklyn.

"The Versatility of Chlorothene in Aerosols," J. W. Barber, Dow Chemical Co., Technical Service and Development, Midland, Michigan.

In addition to addresses scheduled for the two sessions of the Aerosol Division, there will be numerous talks of general interest to fillers and marketers of aerosol insecticides at sessions of the CSMA Insecticide Division. Answers to labeling, regulatory and toxicological problems with insecticides will be considered at a panel discussion at the Tuesday morning session of the Insecticide Division to be presided over by E. J. Campau of Standard Oil Co. of Indiana. At the Wednesday afternoon session, George S. Kido of the Wisconsin Alumni Research Foundation will moderate another panel which will discuss "Some Aspects of Commercial Insecticide Testing."

Aerial view of Continental Filling's main plant at Danville, Ill. (Below) branch plant at Hobart, Ind.

Airborne CUSTOM FILLER

CONTINENTAL Filling Corporation of Danville, Illinois, established in 1946 as one of the country's first aerosol contract fillers, still believes in the time honored sales expression "Our company and its services are no farther away than your telephone." However, as most progressive businesses do, the people at Continental have improved on the "telephone" theme. They now promote the company's unique portable "branch office," which when needed by the customer is no farther away than his nearest airplane landing strip.

C. F. Carter, Continental president, and Jack Campbell, sales engineer, both licensed pilots, fly Continental's four-place Beech Bonanza between Danville and every large city in the country, servicing the scattered aerosol industry.

In the relatively short period of time since Continental started operations, the various services performed for their customers have expanded tremendously. Continental's entry into the aerosol field was an evolution process. The company started as a simple machine shop, progressed to engineering, designing, and building specialized filling equipment and finally to the custom and contract filling of aerosol and pressurized products.

Prior to, and during, the last World War, Clarence F. Carter, through the Carter Engineering Company, manufactured and sold powder filling equipment. This equipment was designed and built to meet the growing demand for better and faster, dust-free packaging of powdered products. Much of the powdered milk used by our armed forces and our allies during World War II was filled on equipment designed and built by the Carter Engineering Company. During this period Clarence Carter became well acquainted with the folks at Continental Can Company, as he was supplying filling equipment for a number of Continental Can customers who had encountered difficulty in filling powdered products. Because of this relationship and because of the reputation Mr. Carter had developed in designing and building specialized filling equipment, Continental Can Company came to Carter Engineering and asked them to build a machine capable of filling the new aerosol can which they had developed. There was no equipment available on the market at the time to perform this operation.

Carter Engineering was willing to design, build, and supply the necessary equipment, but initially no one wanted to take the risk and invest the capital required. After numerous conferences and lengthy deliberation,

Clarence Carter, J. Abbey Miller (his business associate since 1923), and several other colleagues finally decided to take the big step and invest sufficient capital to build one of the first low-pressure aerosol filling plants.

All was not roses and it was not until the Spring of 1947 that the first aerosol cans were filled on a production line. The initial filling line was capable of speeds up to 40 cans per minute. It was not long, however, before this new company, gaining experience from their initial attempts, was pushing production speed up to around 90 units per minute. Today, filling operations of 120 cans per minute are common and will soon be rising to new highs. Continental Filling is currently perfecting a new filling line capable of handling 200 units per minute.

In the early days, the pressurized package was thought of only in terms of insecticide dispensers, and even in this field only a few companies employed the new aerosol method of packaging their products. Gradually more and more insecticide manufacturers turned to this new dispensing method, more and more products were placed in aerosol form, and today the list of products offered to the public, packaged as aerosols, is an impressive one. Addition after addition was built to the original plant, and yet it seemed Continental was always bursting at the seams. In 1951, Continental availed itself of the opportunity to purchase a plant at Hobart, Indiana from the Tetco Company, a Division of the Industrial Management Corporation. This plant actually doubled Continental Filling's existing floor space. New filling equipment was designed, built, and installed in this new plant, doubling the production rate.

Continental Filling Corporation has a complete, experienced and capable engineering staff headed by J. A. Reynolds, vice president in charge of operations. His staff is constantly designing and building new equipment with which to provide Continental's customers with the best package possible. Continental has just completed and placed in operation, this past year, an especially designed explosion-proof line devoted to the filling of production using petroleum hydrocarbons as the propellant. Three years of research and development work made this line possible.

Continental also has a high-speed hair spray filling line at their Hobart Plant which employs the batch-cooled refrigeration filling method. Elaborate procedures have been incorporated to minimize the addition of water to the can during the filling operation.

One of the first users of glass containers for aerosol products, Continental has in operation at its Danville plant one of the most complete high-speed cold-filling lines in the world for all types of cosmetic specialty items. No matter what product type may be under consideration, Continental's research staff, one of the industry's most diversified, is equipped to answer any technical questions which may arise. The laboratory is directed by William Walker.

Recognizing the necessity of producing a flawless package and also recognizing the fact that the aerosol dispenser is perhaps more complicated and delicate than other common containers, Continental Filling was one of the first contract fillers to install a thorough and complete Quality Control and Production Control System. All materials arriving at their plants are systematically checked for both mechanical and chemical acceptability prior to use. During actual production, close control is maintained over the filling operation, and accurate filling weights are constantly determined and recorded. All production line personnel act as inspectors, with at least three people inspecting 100 per cent of the time.

One package from every 1,000 produced, is removed from the line for production control. These one-per-1,000 production control samples are numbered, examined for acceptability, and weighed to the nearest 1/10th gram before being placed in storage. Every other one-per-thousand unit, is stored inverted. These control units are kept a minimum of two years. They represent a cross sampling of every production run in the event there is any question concerning a particular run.

(Left) Wm. Walker, who directs the laboratory, and J. A. Reynolds, vice-president in charge of operations.

(Lower left) C. P. Carter, president, and Jack Campbell, sales engineer.

(Below) Mr. Reynolds, Chris Canaday, vice-president & secretary, and Jack Campbell.

Selling punch for your insecticides...

FAST KNOCK-DOWN AT LOW COST WITH

LETHANE 384

Customers judge your insecticides by their knock-down speed and effectiveness. LETHANE 384 *assures* maximum knock-down efficiency. And today it is still the fastest knock-down ingredient per unit of cost.

Consider its use in:

HOUSEHOLD LIQUID SPRAYS—Low, economical concentrations of LETHANE 384 in household sprays complement the insecticidal power of chlorinated compounds with fast knock-down.

AEROSOL PRODUCTS—LETHANE 384 is compatible with all ingredients approved for use in household insecticide aerosols. A concentration of only 2% helps to give high knock-down—at unusually low cost.

CATTLE AND DAIRY LIQUID SPRAYS—When LETHANE 384 is used alone, or with a suitable chlorinated insecticide, it gives fast-acting, high-kill products for use on livestock, and in dairy barns and milk rooms.

LETHANE is a trademark, Reg. U.S. Pat. Off. and in principal foreign countries.

Chemicals for Industry

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

Continental's quality control program has grown with the company, until today the operation has become very much a part of its customers' own operations as well. When merchandise is received at either of the Continental plants, it is immediately given a thorough quality control inspection based on standards set by the customer on component parts. These reports are forwarded to the customer, so he is always aware of the condition of his inventory.

Since glass aerosols are creating great interest today, we can follow a glass filling day in Continental's Danville Plant. After the bottles have been received and inspected on all points, they are stored in staging areas depending on when they are to be run, the other components being gathered in the same area. The batch is made, all controls checked to assure product perfection, and test samples are drawn and sent to laboratory for approval. After approval, the bottles are fed to the conveyor and thence to the bottle testing machine. This machine, developed by Continental, exposes every bottle to pressure of 125 lbs. instantaneous pressure to show up any weaknesses. Bottles which break are discarded, with careful records kept to account for loss. The machine is also an air cleaner where any dust which may have accumulated in transit is removed.

The bottles now pass to the filling operation which is closely controlled to assure product quality. Moisture, temperature and humidity checks at this stage help prevent trouble from developing later. Valve insertion and clinching follow quickly, and the inspection station here is carefully maintained. The bottles pass on to the water bath test and thence to valve testing where every valve is tested to assure proper spray pattern.

Next they move to another inspection station for checking overall appearance and capping, and then to assembly into display containers or boxing as the case may be. Another final inspection and weighing complete the production run. These bottles which have been carefully guarded all through the day are now ready for storage in the customer's inventory area from which they will be speeded to the various parts of the country. Since Continental Filling is centrally located geographically, it is only a few days either way, and freight savings mount up.

The flexibility of Continental's operation is apparent not only from the wide variety of types of products filled, but also by the fact that runs of from a few thousand into the millions of units are handled with equal ease.

Since a number of Continental Filling's customers are located in the East, they maintain an Eastern Office. Harold Lee, Eastern sales manager is in charge of the Continental office in New York City.

Jack Campbell, who like Mr. Carter enjoys flying second only to the aerosol business, contributes considerable to the thousands of miles that are logged annually on the company plane. A typical Monday morning finds Jack, managing somehow to carry samples, two brief cases, and a suitcase, on his way to Danville's airport. In the air by 8:30, he will land at Chicago Meigs (one mile from downtown) Airport by 9:15. Before the day is over, he will have called on Chicago customers, flown to Grand Rapids, and Kalamazoo, Mich. to service accounts there, and perhaps be spending the night in Detroit. The next morning after calls in Detroit, he is off to contact accounts in Cleveland before returning to Danville by Tuesday evening. Actual time in route to cover one thousand miles in three states—6 2/3 hours. That's what is meant when Continental talks about its "branch office" being no farther away than the customer's nearest airport.★

C.S.M.A. Aerosol Publicity Program

AN "aerosol market development and publicity program" was announced late last month by Frederick G. Lodes, chairman of the CSMA Aerosol Publicity Committee, in a special letter to all members of the association's Aerosol Division. Following is a text of Mr. Lodes' letter:

The Aerosol Division of CSMA has long recognized the need for a special publicity program to stimulate aerosol market growth and to handle industry-wide public relations problems. As a result, it established the Aerosol Publicity Committee to investigate the best means of doing this. After many months of study, your Committee recommends that the following

AEROSOL MARKET DEVELOPMENT AND PUBLICITY PROGRAM

be established to benefit and serve the common interests of our members.

The primary purpose of the program is to *INCREASE THE SALE AND ACCEPTANCE OF AEROSOL PRODUCTS.* This program will be under the auspices of the Chemical Specialties Manufacturers Association with the definite approval of the Board of Governors. It will concentrate on the aerosol industry in general and is not designed to promote any specific product. This program will be directed primarily toward the sale of aerosol products at the consumer level.

To achieve the primary purpose on a long range basis, the following are the objectives guiding this program:

1. To educate the consumer in the convenience, economy, and safety of aerosols, and their essentiality in modern household management.

2. To encourage the manufacturers of consumer products to work with our Aerosol Division in converting their present products into aerosol form.

3. To give information at the consumer level regarding the present availability of the many various aerosol products.

4. To help members explore new markets for aerosol consumer products.

5. To play up and promote both year round and seasonable aerosol products in every possible market.

6. to counteract unfavorable publicity.

7. To establish a central source for information on matters of publicity and industry promotion.

Your Aerosol Publicity Committee recommends that this program be conducted by an established, reputable Publicity Agency.

On the basis of similar successful publicity programs which have been thoroughly investigated by our Committee, it is estimated that a fund of $50,000 to $60,000 a year is required to successfully guarantee the operation of this undertaking, consistent with the high standards of the CSMA interests. Your Committee has determined that a *minimum two year period* is essential to achieve the most satisfactory results and it should not be initiated except on this basis.

Our well rounded campaign will include printed media, radio, television, motion pictures, etc., and will encompass all the tools so necessary for a successful program. In this interest, several proposals have been received and carefully reviewed by your Aerosol Publicity Commit-

(*Turn to Page* 91)

Give your aerosol insecticides
EXTRA SALES APPEAL
with Givaudan fragrances

Today's modern trend in consumer preferences demands a pleasant as well as functional insecticide and mothicide. A Givaudan fragrance — custom-made to fit your particular needs — will give your products that *extra* sales appeal that is so important.

As the largest producer of perfume materials in America, Givaudan maintains special laboratories devoted exclusively to the development of new and finer aerosol fragrances and the solution of problems in aerosol perfuming.

Our staff will gladly recommend, adapt or custom-tailor a fragrance that will give your aerosol insecticides a fresh, distinctive appeal in this fast-growing, highly competitive market.

GIVAUDAN-DELAWANNA, INC.
330 West 42nd Street, New York 36, N. Y.

F. G. Lodes, Pioneer in Development of Aerosols, Forms Consulting Firm

Frederick G. Lodes

THE FORMATION of a new consultant firm staffed to meet the growing needs of a rapidly expanding aerosol industry was announced this week (Dec. 3, 1956) by Frederick G. Lodes, aerosol pioneer and executive.

The new organization, Lodes Aerosol Consultants, Inc., 730 Fifth Ave., N.Y., will devote itself exclusively to the problems of pressurized packaging. The firm's organization of specialists will make the latest aerosol information available not only to companies already in the industry, but also to corporations on the outside that wish to expand or diversify by entering this promising field.

Establishment of the new firm, which Mr. Lodes will direct as President, marks the entry into the aerosol field of what is reported to be the first consultant group equipped to serve the industry in three broad areas vital to further growth—(1) Technical assistance; (2) Consultation concerning the foreign aerosol market, and (3) Surveys relating to proposed business acquisitions.

"Our fast-moving $300 million aerosol industry is starting to come of age," Mr. Lodes stated. "With our growth have come many more problems and many more opportunities for the future. We feel that a comprehensive consultant service of this kind, dedicated to the aerosol principle, is not only timely but imperative."

Technical assistance by the new firm will cover the research, manufacturing and marketing phases of the aerosol industry with special emphasis on guidance to those wishing to enter the field. The firm's decision to undertake management studies in the area of proposed company expansions and acquisitions, stems from its belief that the industry is now ready for this phase.

"We are now on the threshold of the tenth anniversary of the low pressure aerosol," Mr. Lodes stated. "Many companies in the field have reached a point in their growth where they are now attractive to larger companies on the outside wishing to expand and diversify.

"A much overlooked area for widening the scope of the industry is the foreign aerosol market," Mr. Lodes said. "There's tremendous potential for the aerosol abroad. Remember that some of the European countries came to us for our know-how as far back as eight years ago. Since then the encouraging aerosol progress I've seen in England, France, Germany, Italy and other foreign countries gives promise of considerable advancement overseas."

The new firm is also prepared to keep the American aerosol industry informed about developments in Europe and elsewhere, and will keep foreign countries abreast of aerosol developments in the U. S.

In 1941, after receiving his B.S. degree in chemistry and business administration from Fordham, and an M.S. from Columbia Univ., Mr. Lodes joined the General Chemical Division of Allied Chemical & Dye Corp. Beginning in 1945, he developed various types of liquefied gas propellants there for aerosols, now known as the "Genetrons." At this time aerosols were in their infancy and Mr. Lodes was given the responsibility of interesting potential manufacturers and marketers in self-spraying products. In doing this he made wide contacts with all segments of the industry.

As a result of his work with aerosols, Mr. Lodes realized that one of the many obstacles to the development of this method of dispensing a wide variety of products was the absence of a universal valve. Thus he became a co-founder of Precision Valve Corp., a leading manufacturer of aerosol valves. He recently resigned as an officer and director of this company, which he was active in developing for the past six years, to start his present consulting venture in aerosols.

Mr. Lodes has made patent contributions to the development of major components of the aerosol package, including containers, valves, propellants and formulations. In recent years he has made a number of trips to Europe to promote the aerosol principle. He has been called on to make a number of radio and TV appearances to demonstrate and explain the aerosol idea. For the past ten years Mr. Lodes has been active on many committees of CSMA's Aerosol Division.

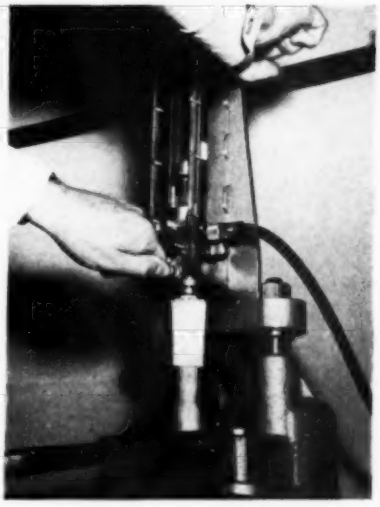
■

Plan to Grant Licenses

Albert Edelstein, manufacturer's representative of New York, recently announced that he is prepared to grant non-exclusive licenses under his broad coverage patent (No. 2,764,454). The patent (an abstract of which appeared in the November *Aerosol Age*) covers a material to be sprayed, protected in a capsule, pill or pellet, while the propellant is loaded. The capsule is subsequently dissolved, releasing the active material.

According to Mr. Edelstein, the method affords better quality control, more savings in both short and long runs, and allows scientific precision fills of minute quantities of materials, particularly those related to pharmaceuticals and cosmetics.

"It's easy



Typical of van Ameringen-Haebler laboratory leadership is this Liquified Gas Manipulator, first installation of its kind, with which the contents of any type container can be removed, replaced or transferred with complete flexibility under constant pressure.

van Ameringen-Haebler, Inc. 521 WEST 57tr

...if you know how"

So is Aerosol!

If you are planning to market a pressure-packaged product—remember that van Ameringen-Haebler, Inc. has overcome seemingly insurmountable problems for many manufacturers. The unparalleled excellence of the VAH Aerosol Research Laboratory provided with every facility for complete evaluation, formulation, progressive examination, test packaging and trouble shooting, plus the authoritative experience gained in the development of hundreds of successful aerosol products, is available to assist.

Although primarily concerned with matters of fragrance, VAH established its unmatched laboratory facilities to assist its customers in every phase of this new field of packaging, from product formulation to pilot runs for market testing.

STREET, NEW YORK 19, NEW YORK

BECAUSE the aerosol industry is a "booming" one, and still expanding . . . because consumers have shown decided approval and acceptance of aerosols, Macy's has given their own vote of confidence in this new package by adding aerosol hair sprays, shaving foam, and an air freshener to the Macy private label package line. It's a tremendous market, says John W. Strausz, merchandise administrator of Macy's, New York, who outlined Macy's policy on its private label merchandise.

We don't "push" Macy products, he said; we persist in the policy of "a good product for less in the Macy brands," with all products carrying the Macy label necessarily meeting the specifications of the Macy Bureau of Standards.

There is no need for customer acceptance surveys, or market analyses, because Macy's decision to offer a new aerosol or any other product under the Macy label is predicated on consumer acceptance of similar products, as evidenced by Macy's own sales figures. Furthermore, a substantial enough volume must be involved to allow a potential product to be considered for private label manufacture and packaging. The gamble is minimized when Macy's accepts a product for private packaging — so what greater tribute to the aerosol industry than that Macy's already have three aerosol products of their own and are very much disposed to add new products to their aerosol line.

This rather explains how decisions are made on what new aerosols Macy will add to its line in the future, but *Aerosol Age* thought you would be interested in knowing who makes the decisions. . . . Who prepares the formulation. . . . Who does the packaging and filling . . . and what are the arrangements for quality control.

We talked with John W. Strausz, Macy's merchandise administrator, for some of the answers to these questions. Mr. Strausz said that decisions on what products to buy, package, and merchandise result from cooperative discussions between the buyers and merchandisers, following which close cooperation with Macy's Bureau of Standards (located at Long Island City, New York) offers the practical solution to preparation of the product in question.

The chief chemist at Macy's laboratory is asked to submit either a suggested complete formulation, or specifications of some of the ingredients to be included in the Macy product. Substantial use is made also of the laboratories and technical service of custom fillers, who are requested to submit samples of aerosol packaged products for selection and approval. The custom filler generally offers several samples, with varied scents and formulations, meeting minimum specifications laid down by Macy's laboratory. Even after selection and approval, Macy's chemists and laboratory maintain a constant check on all

by
Eleanore Kanar

products to ascertain that they will continue to meet Macy specifications.

The Macy factory and laboratory employs some 51 production people, four chemists, a chief chemist, factory manager, and purchasing agent. Three general classifications of products are handled: emulsions, (cold creams, lather products, toothpastes, face creams, etc.); dry formulations (face powders, tooth powders, etc.); and wet formulations (mouth wash, milk of magnesia, astringent lotions). These products are completely formulated and packaged for Macy's at the factory.

Products which are sold as pills or tablets are formulated and made in private formulation houses, sold to Macy's in bulk, and packaged in bottles, cans and cartons at Macy's factory. Products which require specialized machinery, such as rubber products, razor blades, etc., are made and packaged under the Macy label by custom packagers to Macy Bureau of Standards specifications.

Getting back to aerosol packaging, Mr. Strausz pointed out that making aerosols requires special equipment and should be left to experts, so that all of Macy's aerosols are made and packed by custom fillers.

A close look at current Macy aerosols offers the following information about these products:

The Macy Hair Spray is packaged in a 16 ounce American Can, uses a Precision valve, and retails at $1.29. An attractive paper wrapper carries use and caution statements. Macy first offered its own aerosol hair spray in 1954. As PVP was added to other commercial hair sprays, Macy too changed its original formulation, to offer its customers a comparable product, typical of its policy of keeping pace with changes and improvements by the industry.

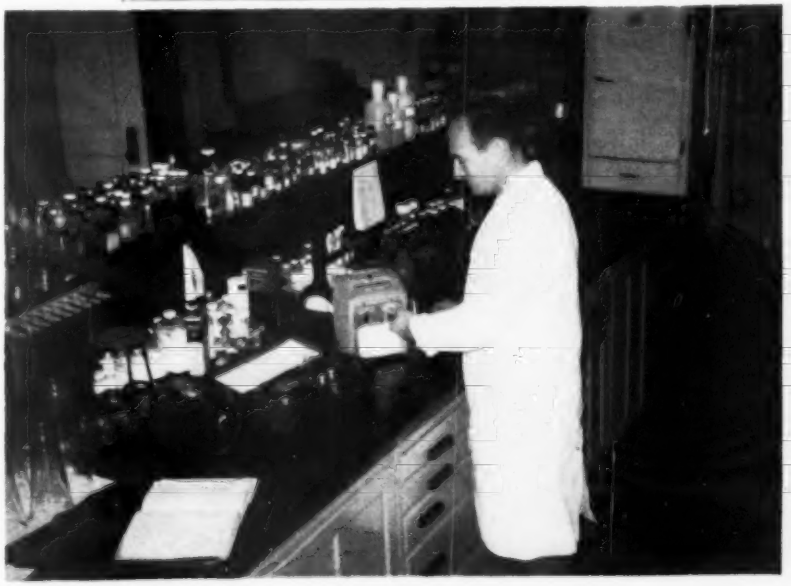
Macy's Shaving Foam, is packaged in a 12 ounce lithographed Crown Can, with Clayton valve and retails for 69 cents.

Most recent addition to the Macy aerosol line is the Macy Air Freshener, packaged in a 6 ounce American Can. It is paper wrapped, uses a Precision valve and retails at 59 cents. The air freshener is having its first season on Macy counters, so sales figures are still undetermined.

What about the future of aerosols at Macy's? "We're very much interested in adding more aerosols under the Macy label," said Mr. Strausz. "Right now we think an aerosol personal deodorant might be added, but we're looking for the right formulation. As anyone who has tried pressure packing a personal deodorant knows, several technical problems (corrosion being one) are concerned. As soon as they're solved we'll be on the band wagon." Macy's is also considering pressure packing sun tan lotion, and perhaps men's hair sprays . . . but the final answer lies with the consumer. . . . The Macy customer.★★

A display of Macy's Air Freshener in the soap and cosmetic department of the firm's Herald Square store.

Martin Bennett, assistant chief chemist, performing a laboratory analysis on a cosmetic product at Macy's laboratories.



Look for these labels soon!

THE KEY TO MODERN LIVING
ISOTRON
PROPELLENT-12
DICHLORODIFLUOROMETHANE
Pennsalt Chemicals
NON-FLAMMABLE • LIQUEFIED GAS UNDER PRESSURE
CYLINDER HANDLING AND STORAGE: Store out of sun and away from
Keep valve tightly closed. Never drop or refill cylinders.
PENNSYLVANIA SALT MANUFAC
Return empty container to
Calvert City, Ky.
THE KEY TO MODERN LIVING
ISOTRON
PROPELLENT-
• LIQUEFIED GAS UNDE
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SALT MANUFACTU
Calvert City, Ky.
THE KEY TO MODERN LIVING
ISOTRON
PROPELLENT-11
TRICHLOROMONOFLUOROMETHANE
NON-FLAMMABLE • LIQUEFIED GAS UNDER PRESSURE
CYLINDER HANDLING AND STORAGE: Store out of sun and away from heat.
Keep valve tightly closed. Never drop or refill cylinders.
Return empty container to
PENNSYLVANIA SALT MANUFACTURING CO.
Calvert City, Ky.
Pennsalt Chemicals

...on Pennsalt's new propellents

ISOTRON

THE KEY TO MODERN LIVING

Now—even before the complete line of ISOTRON* fluorinated aerosol propellents is ready—Pennsalt offers the much-needed "missing link" of individualized *service* and assistance to the aerosol packaging industry. Pennsalt will work with you *now* to improve your present products and processes with ISOTRON propulsion, or to develop entirely new aerosols using one or a combination of ISOTRON propellents.

A pioneer and leader in modern fluorine chemistry, Pennsalt stands squarely behind the new ISOTRON line. ISOTRON products are COMPLETELY INTERCHANGEABLE with other reputable fluorinated propellents. They're of precisely the same formulas as the other products of this kind, and will be manufactured in a modern new plant with the rigid quality control you expect of Pennsalt. ISOTRON propellents will be packed at the plant in all standard containers.

INVESTIGATE THE ISOTRON LINE! Benefit from Pennsalt's advanced thinking and welcome *service*, already available nationwide to manufacturers and packagers of liquid, semi-solid, or powdered consumer products. For further information on ISOTRON propellents, write Isotron Chemicals Dept. 384, Industrial Division, Pennsylvania Salt Manufacturing Company, Three Penn Center Plaza, Philadelphia 2, Pa.

*ISOTRON IS A TRADEMARK OF THE PENNSYLVANIA SALT MFG. COMPANY

Pennsalt Chemicals

Spray Tan

Sprayway
Lanosoft
HAND
CREME
QUICK ACTING HAND LOTION
WITH SILICONES & LANOLIN

GERMICIDAL · FUNGICIDAL
Sprayway
Foot Spray
SOOTHES
TIRED
ACHING
FEET
RELIEVES
ATHLETES
FOOT

white
frost
SPOT CLEANER

Fur
Frost
FOR SPRAY CLEANING
AND STORAGE OF FURS

New Products and Packages

Spray-Tan will appear on the American market in the spring or summer of 1957. It was one of the more successful aerosol products in Europe, selling some 1.5 million units last season. It is a product of Alvex A.G., Paris, France, which made way for American marketing of the product by purchase of Spra-Tan from Clay Glover. (See Page 79)

Lanosoft hand cream and **Sprayway** foot spray were recently introduced by Sprayway, Inc., Chicago.The hand cream, retailing at 98¢, is snow white in color. It is fortified with both lanolin and silicones, and the manufacturer advises that it provides protection against detergent action to tender hands if used before dish washing. The foot spray relieves athletes foot, de-contaminates shoes, and relieves hot, tired feet. It retails at $1.50.

Box fire extinguisher and **Box** fly killer were recently introduced on the Swedish market by Klarre & Co. A.B., Stockholm, Sweden. Klarre is marketing the moth and fly aerosol in six, eight and 12-ounce cans and the fire extinguisher in 12 and 18-ounce sizes. According to the manufacturer, the extinguisher is the only new type that has been tested by Sweden's Government Testing Institute and approved by the Swedish Fire Rating Association.

Fur Frost and **White Frost** spot cleaner are both products of White Frost Chemicals, Inc., Greenwich, Conn., and both are being packaged in 12-ounce Crown cans with Aerosol Research valves. **Fur Frost** is also being put in a ConCan three-ounce can for a sample with Ollegro garments. The large can retails for $4.95 and may be used to clean furs, fur trims, and deep-pile fabrics like Ollegro. The spot cleaner contains solvent XM-133, and is for cleaning all types of synthetic, wool, and cotton fabrics. It retails at $1.98.

Sootspray aerosol furnace cleaner is a product of Stewart-Hall Chemical Corp., Mt. Vernon, N. Y. It retails at about $3 per 12-ounce container. According to its manufacturer it will burn away 99% of the soot. It uses a Crown container, Precision valve, and Freon propellant.

Fresh-N-Air is a deodorant for both nursery and for direct application on diapers. A product of LeMur Chemical Co., a division of the Nestle-LeMur Co., New York, Fresh-N-Air is being marketed in a ConCan container with an Aerosol Research valve. It retails at 79¢ for the five-ounce can.

Preferred for Foam Product Dispensing because of Functionally Superior,

Clayton
"NOZZLE DOWN"

dispensing valves and covers

Ever increasing and impressive...the nation-wide preference for "Nozzle Down" valves and covers for shaving creams, hand creams, shampoos, suntan creams, rug and upholstery cleaners . . . all foam dispensed products! Why this definite Clayton-trend? Because of these proven, outstanding Clayton features:—

ABSOLUTELY TROUBLE FREE! Proven simple non-clogging design.

GREATER PRODUCTION ADVANTAGES! Valves can be pressure filled. Reports from users indicate very highest production speeds.

ALL VALVES AVAILABLE WITH COATED MOUNTING CUPS! Colored-enamel exterior coatings . . . highest quality corrosion-resistant interior coatings.

COMPLETELY, SECURELY ASSEMBLED! Nothing to put together. Components can't come apart in shipment or use.

VARIOUS FLOW RATES!—to suit specific product requirements!

FIT ALL TYPES OF PRESSURE CONTAINERS with standard 1" diameter openings. Also available for 202 and 211 diameter pressure-type cylindrical containers of all sizes.

NO ACCIDENTAL DISCHARGES! Exclusive screw cover principle assures absolute safety. Valve is securely locked in non-dispensing position when covered.

TIME-TESTED AND PROVED ON HUNDREDS OF MILLIONS OF CONTAINERS!

These Clayton Products Give Your Package
MORE GLAMOUR...MORE SALES APPEAL!

Clayton's "Dress-Up"™

Plastic skirt simply and permanently snaps on to top of container.

Glama-Walls™ and Covers

The Glama-Wall snaps on permanently to standard production containers. User simply removes small, handsomely designed locking screw cap. Available in an unlimited variety of colors, shapes and sizes.

For details on more attractive, economical and efficient packaging for your foam product...write, phone or wire

Clayton
CORPORATION

Proven Outstanding Features!

NO MISSES—NO MESSES...WITH NATURAL "NOZZLE DOWN" DISPENSING!
Points the product where you want it! Leaves no excess on side of can.

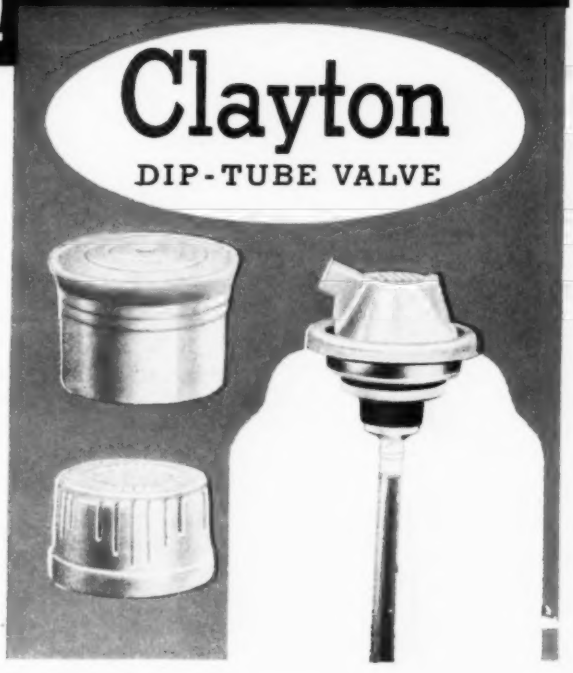
THE ONLY POSITIVE ACTION SCREW COVER AVAILABLE ON THE MARKET!
Stays securely!—one easy three-quarter turn and your product is safe for shipping. Handsomely designed . . . adds a finished appearance to your product.

UNIQUE, DISPENSING
Perma-Cover™

Screws on like a regular cap in production . . . never comes off! A simple turn, it dispenses. Another turn, it closes.

Now These Important Features In a Dip-Tube Valve!

- Dispenses with forward or downward push.
- Pressure fills at highest production speeds.
- Permits uniform gassing.
- Assures smooth, uniform dispensing of products.
- Available with coated mounting cups . . . colored-enamel exterior coatings — highest quality corrosion-resistant interior coatings.
- No metal valve parts exposed to product.
- Covers fit better . . . protect better.



4205 FOREST PARK BOULEVARD
SAINT LOUIS 8, MISSOURI

A Possible Method for

Packaging Gassified

THE manufacture and packaging of gas-charged liquids, which has reached such enormous proportions in the soft drink field, seems likely to increase much further as more and more products are packaged in aerosol-type containers. It seems equally likely that some of the time-honored procedures for making and packaging such products will be improved upon to the advantage of all concerned.

In his work as a consulting engineer in a number of different industries, the writer has found that the evolution of a manufacturing process almost always follows the same course. First, a workable operative procedure is established. Then, from time to time, improvements in the basic procedure are evolved until a point is finally reached where further modifications of the original procedure reach a point of marginal utility. As this point is reached, any substantial improvement can be made only by considering the whole subject from an entirely different point of view. Not infrequently, in the writer's experience, this latter type of improvement is suggested by someone not directly connected with the industry, perhaps because his experience in other fields makes him more aware of techniques in one field which could be used to advantage in an entirely different one.

The writer makes no pretensions of being an expert in the field of aerosol packaging, but does feel that some observations by an "outsider" might be of interest to the industry. His interest in the general subject of aerosol packaging originated some years ago when he was approached by a concern that knew of his work in designing equipment for applying vibrational energy to the solution of various industrial problems, with the request that he design for it a machine for the rapid agitation of a number of cans of topping mix, while they were being gassed with a mixture of nitrous oxide and carbon dioxide gas.

A cursory examination of the problem indicated that such a machine could become quite complicated, if commercial quantities of cans were to be handled, so an attempt was made to determine which such agitation was necessary, and if so, whether some alternative and simpler method could be devised for accomplishing the same end result.

In his paper entitled "Packaging Whipped Cream in Pressurized Containers" (*Food Technology*, June, 1950), Earl Graham states that "Experience has shown that the absorption rate of the gas without agitation is very slow." Experimental work suggested that perhaps the major role played by the agitation procedure was to increase the surface area of the topping mix, thereby facilitating gas absorption.

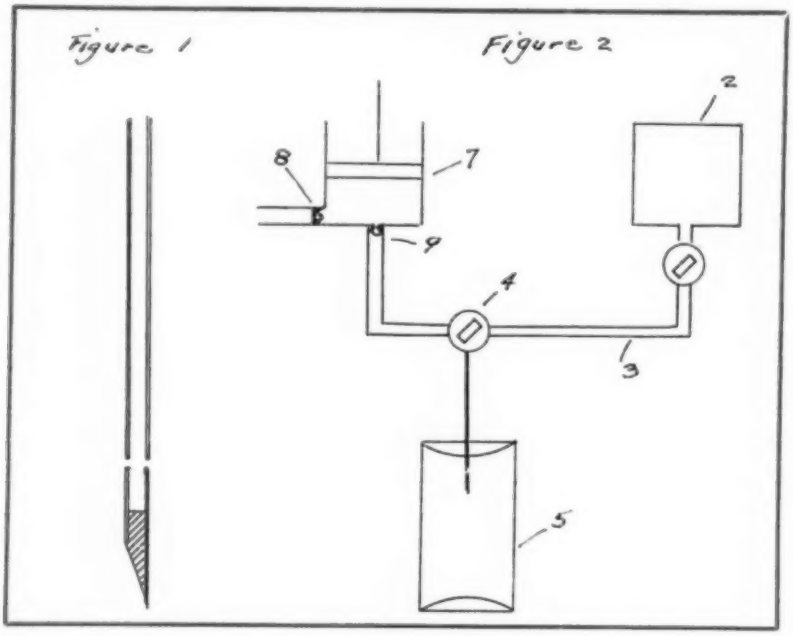
The writer felt, therefore, that if the surface area of the mix could be uniformly and greatly increased during the gassing operation, a more uniform product should be obtained, and the necessity for shaking during gassing might be eliminated with a consequent saving in equipment, labor, and costs generally.

The method finally evolved was to *introduce the required amount of gas into the container first*, via a hypodermic needle, piercing a perforable membrane, or other suitable means, and *then* to introduce the topping mix in the form of a thin stream or spray, through the same opening.

Such a procedure, while obviously differing in details from current methods, nevertheless is not one which would require any very drastic

Figure 1

Figure 2



Products

By Edward W. Smith
Melrose Highlands, Massachusetts

changes in equipment, and yet would make it possible to simplify the operation.

While the details of procedure were distinctly unorthodox, the writer was able to produce, experimentally, a uniform package of whipped cream, or topping mix, *without shaking*, using the equipment shown schematically in Figures 1 and 2. The needle shown in Figure 1 consisted of an ordinary hypodermic needle, .072" in outside diameter, with two holes as shown, .038" in diameter, back of the closed end. This needle was first forced through a perforable membrane, such as is shown as 6 in Figures 3 and 4. The gas mixture was then introduced from reservoir 2, via a hose connection 3, and valve 4, to the requisite pressure. The 2-way valve 4 was then turned to the opposite position, and the material to be dispensed was forced into the container 5 by means of the metering pump 7, which draws the requisite amount of liquid from a source of supply (not shown), through valve 8 and then sprays it, via valve 9 and valve 4 into the container, through the needle.

Upon completion of the operation, the needle was withdrawn and the internal gas pressure in the container, pressing membrane 6 against the metal backing which supported it, resulted in a horizontal component of force which effectively closed the perforation in membrane 6, after the needle was withdrawn. The type of perforable membrane shown in Figures 3 and 4 readily lends itself to mass production and installation on the container by automatic means without excessive increase in the cost of the container as a whole.

An even greater simplification of the equipment involved in filling the container would be brought about by the packager receiving cans already gas-filled from some central supply source, and then spraying in the desired product under pressure as outlined above. It is recognized of course that this idea might not be practical unless aerosol marketers could agree, for big-volume products at least, on some standard propellant combinations and ratios.

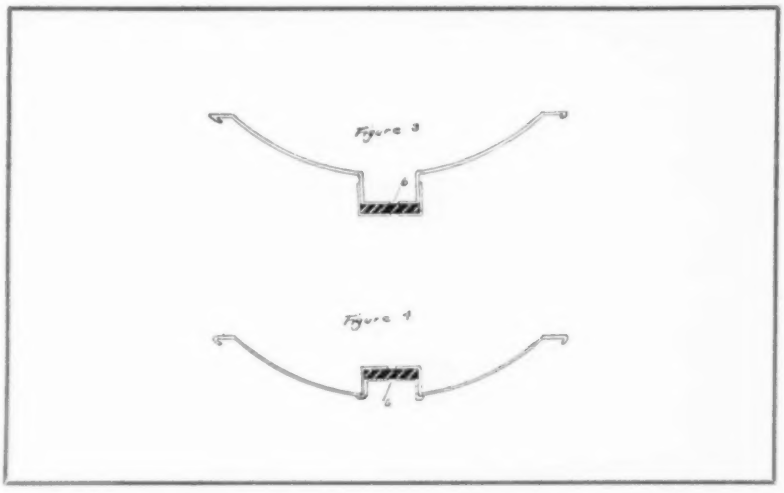
While reference has been made up to now, primarily to the filling of cans, or other containers, intended to dispense whipped cream, or topping mix, the writer's method broadly contemplates using this procedure for other products as well which are normally gassified.

For example, ordinarily in the preparation of carbonated soft drinks, the carbonation is accomplished by cooling the liquid to a fairly low temperature, i.e., 33-34 degrees F. at the time the carbon dioxide is introduced. At this temperature the solubility of the carbon dioxide in the liquid is considerably greater than it is at room temperature. The carbonated drink is then transferred to the bottling machine, the bottles, or cans filled, and the crown affixed.

There are several disadvantages to the standard procedure now in use. The capital investment required to provide the necessary cooling is not inconsiderable if any substantial quantity of beverage is to be carbonated. Furthermore, it is difficult to maintain the same degree of carbonation in each bottle, as a certain amount of the gas is likely to be lost between the time the bottle is filled and the crowning operation is completed. Both of the above difficulties can be avoided and the whole process considerably simplified by using the writer's suggested method.

In the case of carbonated drinks it would be necessary to make a slight change in the crown as shown in Figure 5. Here, the usual metal crown would be perforated as at 11 (Figure 5), and a self-sealing material interposed between the crown and the bottle, or can, 13.

The bottle, or container, would first be crowned in the usual way with a crown such as is illustrated in Figure 5, and the self-sealing material 12 would then be pierced by the needle shown in Figure 1, via the opening 11, and the carbon dioxide introduced to the desired amount. The liquid would then follow, under pressure, and be sprayed into the container to the desired amount. The writer has found that a "split" bottle can easily be filled in 6 seconds in this manner with excellent results, the above time including both the gassing and the filling. No difficulties have been encountered in retaining the desired pressure of carbon dioxide, as the hole made by the needle is adequately closed by the internal pressure in the container against the crown.



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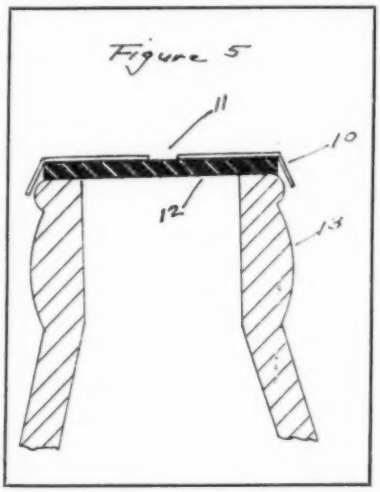
Modification of the usual type circular filling machine with, say 25-30 stations, equipped with needles like the one shown in Figure 1, should make it easily possible to achieve a filling rate on "splits" of around 300 per minute. If desired, the bottle could be evacuated of contained air through the same needle, previous to gassing with carbon dioxide as explained above, and with many products this would be desirable. All that would be involved would be to use a 3-way valve at 4 (Figure 2) instead of the 2-way valve shown, with the third position going to the vacuum pump.

Figure 6 indicates another type container of, say 5 gallons capacity, where instead of using a needle to pierce a perforable membrane, a valve 15 could be made a more or less permanent part of the container, serving to introduce the gas to the desired amount and then spraying the material into the gas-filled container, from which it could later be dispensed through valve 14.

The enormously increased surface area of the beverage as it is sprayed into the gas atmosphere in the package, allows the gas to be absorbed readily, so that excessive pressures are not built up in the bottle, and even though the filling is done at room temperature, no carbon dioxide is lost and absolute uniformity of gas content can be assured.

From what the writer has seen, no insurmountable difficulties should be involved in the manufacture of a crown similar to the one shown in Figure 5, and once this is available, a considerable saving in the cost of carbonating beverages should be feasible.



Edward W. Smith is a graduate of Massachusetts Institute of Technology, Class of 1923, and has spent much of his career doing consulting engineering work in various industries. At present about half his time is devoted to developmental work on processes for various interested companies. He extends patent licenses to these companies, along with such engineering assistance as they may require.

While only two illustrations of possible applications of this process have been described, the principle of forcing a liquid in the form of a spray into a gaseous atmosphere in a container has many possible other applications where rapid and effective absorption of the gas by the liquid is either desirable or essential. It is expected that the patented* principle involved may find considerable application by those interested in packaging gassified products.

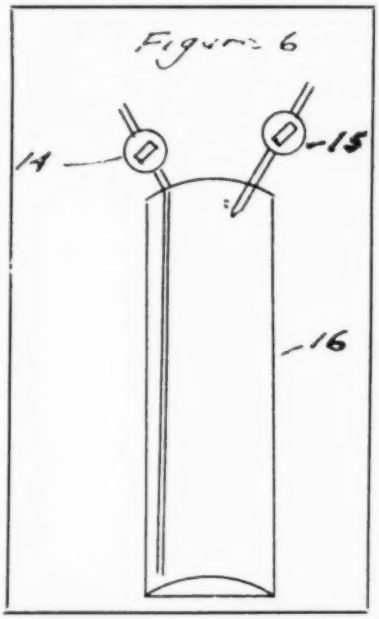
As was stated in the beginning, substantial improvements in a process, whatever its nature, once the initial procedure has been established and refined, can usually come only from a fresh type of approach which, it is believed, the writer's process will provide in the case of gassified products.★

Solvent Tests Advised

"To prevent explosions in buildings when using aerosols produced by generators, a formulation must be used which will not explode even if a spark or an open flame is present," points out A. H. Yeomans, of the Stored-Products Insects Section, Agricultural Marketing Service, USDA, in an article in the June *Journal of Economic Entomology*. Entitled "Tests to Develop Nonexplosive Mixtures of Solvents in Formulations for Use in Aerosol Generators," the article says that aerosols in fine particle size exploded more readily than those having larger particles. "It was also found that tetrachloroethylene, if present in sufficient quantity, would suppress the flammable solvent, producing a nonexplosive formulation."

The article reports on the testing of a number of DDT-lindane formulations having a mixture of flammable solvents and tetrachloroethylene to determine their stability at low temperatures and their comparative toxicity to adult flour beetles. "The results indicated that in most cases the formulations containing mixtures were more stable than those with tetrachloroethylene alone as the solvent. The biological tests showed no toxicity difference."

"Since such mixtures would cost much less than tetrachloroethylene alone, the investigation was continued by determining the maximum quantity of a number of flammable solvents that could be mixed with it to produce nonexplosive formulations . . . The results of the tests show that the proportion of flammable solvents must fall somewhere between 27.7 and 15% by formulation weight, to avoid the hazard of explosion." Panasol AN-1 and Panasol AN-3, Solvesso 100 and 150, Velsicol AR 50G and 60, Sovacide 544C, Heavy Aromatic Naphtha 132, deodorized ApCo 468 and MEK were the flammable solvents evaluated in the tests.



*The patents involved are U. S. No. 2693,418 and U. S. No. 2,757,843.

AEROSOLS ... in Review

AEROSOLS and the aerosol industry are finally being discovered by publishers of magazines, trade journals and company publications all around the world. Several magazines have recently devoted entire issues to articles on aerosol subjects, and there has been an increasing number of single articles of general interest in a widening list of magazines. Many of these articles are necessarily introductory in character, and often repetitious, going back over much material that is already quite familiar to those directly in the aerosol business. Nevertheless we feel that it should serve a useful purpose to abstract regularly in *Aerosol Age* a wide cross section of this growing literature on aerosols so there can be some central clearing point through which it will be possible to keep track of what has been written on the subject. It will be very helpful to us if readers will take the time to call our attention to articles which we shall inevitably miss.

THE September 1956 issue of *Naarden News*, house organ of N. V. Chemische Fabriek, of Naarden, Holland, carries an article on "AEROSOLS — a brief examination of various cosmetic and domestic aerosol products, three-phase areosols, technical and pharmaceutical aerosols." Discussing deodorant aerosols, it is observed that these products place a particularly heavy demand upon the valve, since the active components are highly corrosive. It is essential that in an aerosol of this type the valve guarantee an adequate spray. Perfuming of deodorant aerosols is a more complex problem than for aerosols of other types. "Appropriateness and keeping qualities of the perfumes, at the low pH inevitably associated with astringent chemicals such as aluminum chloride, must be very carefully tested. As dilute alcohol is used in the majority of cases, the solubility of the perfume is another requirement with which it is extremely difficult to comply."

Solubility of ingredients in aerosol deodorants, as a matter of fact, is a point of primary importance right straight down the line. Aluminum salts, commonly employed to counteract perspiration and other body odors, are insoluble in the liquefied gases employed as propellants. This necessitates use of a co-solvent. "It is true that the liquefied gas is fairly soluble in high-percentage alcohol, yet this is offset by the fact that the majority of astringent substances are poorly soluble in high-percentage alcohol. Solubility can be improved by diluting the alcohol, but this in turn results in a reduction of the solubility of the liquefied gas. The sum total of all this, therefore, is that it is essential to find a compromise. Triangular diagrams have been drawn up, illustrating the mutual correlation between these various factors. The pressure prevailing in the system is also a function of these factors. After all, the pressure of a certain gas, dissolved in a given ratio in alcohol, rises in proportion to the quantity of water present in the alcohol, and the solubility of the gas consequently decreases. The pressure approaches a maximum value which is achieved when the alcohol is diluted to such an extent that the gas threatens to separate from the liquid medium. In the latter case the diluted alcohol is saturated with liquid gas and the pressure has reached its maximum value, viz. the maximum vapor tension at the prevailing temperature."

The author also describes the numerous difficulties connected with the preparation of aerosol wax products. In determining which of the possible raw materials are suitable for incorporation in such products, solubility must be carefully checked in relation to appropriate carriers and gases to be employed. "If the waxes are entirely soluble and temperature variations are not too great, few difficulties will be encountered as a rule. Attention must constantly be paid, however, to ensuring that the solvents employed do not exercise a detrimental influence on the objects to which the wax is to be applied."

A suggested first step is to formulate a wax combination possessing the desired characteristics, then check solubility and ascertain the most appropriate combination of gases and co-solvents. The spray characteristics of the finished product will of course be governed by the pressures employed, the quantity of gas and the consistency of the wax concentrate. It may prove impossible in some cases to compound a suitable aerosol product without modifying the original wax formula. Difficulties along this line can sometimes be circumvented by incorporating the wax ingredients in a non-dissolved form, that is in suspension. However this solution sometimes gives rise to other difficulties such as the clotting of the suspended particles and formation of coarse agglomerates which interfere with normal functioning of the valve.

The problems involved in suspending wax products in aerosol form are somewhat the same as those involved in the preparation of powder aerosols, the author observes. "If the specific gravity of the wax is lower

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than that of the liquid components, the waxes will show a tendency to form a layer at the top of the liquid. If the reverse holds good, the wax will sink and form a sediment, although this happens far less frequently. The decisive factor in this case is whether the original suspension can be restored simply by shaking the container. To complicate matters the wax components are partially soluble in the liquid phase, so that this might lead to 'cementing' of the wax layer . . . The ideal condition, as will be readily appreciated, is when the specific gravities are more or less the same."

(An earlier article dealing with other problems in connection with formulation of aerosols was carried in the July 1956 issue of *Naarden News*.)

FRIEDRICH H. HANS, manager of the Frankfurt office of Pegasus International Corp., New York, is the author of an article, "Kosmetika und Aerosol Verpackung," which appeared in the October 1956 issue of *Parfumerie und Kosmetik*, Frankfurt-am-Main, Germany. The article presents to its European reading public a survey of the aerosol field in the United States, particularly as applied to cosmetic and toiletries preparations. An analysis of the tremendous growth in the application of pressurized packaging to such products is given and a comparison made with trends in Europe, with some suggested reasons as to why the European aerosol industry is still far behind the United States. Production statistics for various types of European aerosol products are cited and a discussion is presented of the differential in purchasing power (as compared with normal foreign exchange rates) and the effect that this considerably lesser purchasing power has upon the sale of aerosols.

One of the major problems confronting the European manufacturer of aerosol products is the rather small volume involved in most production runs, which tends towards much higher unit prices when the product is ultimately marketed. The lack of any wide-scale distribution of television sets and hence the lack of television advertising, as well as the general lack of other conventional types of promotion, is given as another reason for the consumer's lack of knowledge about what an aerosol is, and what its advantages are.

It is suggested that with greater mass production and a realistic approach to profit margins on the part of the wholesaler and retailer, coupled with some educational advertising, aerosols could prove to be as great a growth industry in Europe as they have been in the United States. Other incidental problems, which the American aerosol industry has faced during its development are discussed, with recommendations as to how such difficulties could be anticipated and, perhaps, eliminated or at least reduced during the expected subsequent growth of this field in the various European territories. For those individuals or organizations in the United States, who are contemplating the introduction of aerosol cosmetic packages to Europe, this article is well worth further study before any final commitments are made.

AN ARTICLE in the October 1956 issue of *American Exporter Industrial* under the title "Dutch Contract Filler Uses Latest Aerosol Techniques," describes the operations of Aerosol Company Holland N. V., Hilversum, Holland. The company, biggest custom filler in Holland, was started by L. van Workum who became interested in aerosols while employed in the United States in 1949 and 1950. After several years of research into formulations, build-up of plant equipment, and the acquisition of experience in the solution of aerosol loading problems, the operation really began to expand in a big way about two years ago. Today the plant has a capacity of 3,500 aerosol units an hour, two-thirds cold filled and one-third pressure filled. Some 45 employees constitute the staff.

About half the products packed at Hilversum are insecticides. Room deodorants are second, followed by shaving creams, perfume, hair lacquers, sun tan oil, a plastic spray for chrome finishes and fire extinguishers. Many of the formulations packed by the company come from the United States. Insecticides, for example, are supplied by Fairfield Chemical Division, Food Machinery & Chemical Corp. Valve suppliers include Precision, Aerosol Research Co. and Risdon. Crown is the principal source for cans, while glass aerosols come from Wheaton Plastics. Propellants are purchased from G. L. Loos & Co. Fabrieken N. V., Amsterdam.

Mojonnier Associates, Inc., Franklin Park, Ill., filling equipment is used, the models being semi-automatic, as batches are relatively small compared with U. S. production, while wage rates are only about one-fourth of comparable U. S. rates. Since the business is still expanding at a rapid rate, equipment is not attached permanently to the floor, in anticipation of early expansion into a new plant. When this happens, only oily materials and paints will then be filled in the present plant, and all other formulations will be handled in the new quarters.

According to Mr. van Workum the success of the enterprise, and the high quality of the products turned out, is traceable directly to the employment of top quality U. S. materials and equipment. Rejections upon test run no higher than two to three containers per thousand. In accordance with the company's contracts with customers, rejects up to one per cent are on the customer's account. All rejects over one per cent are charged to Aerosol Company Holland.

CONTINUING its series of articles on aerosol paints, the magazine *Paint, Oil & Chemical Review*, Chicago, carries a discussion on the role of "The Custom Aerosol Packer" in its issue for October 4, 1956. They point out that most of the paint manufacturers who have gone into the marketing of aerosol paints have found it most practical and economical to employ the services of a custom filler.

"It takes money, space, personnel, and know-how to take the units form-

(*Turn to Page* 105)

What the industry thinks of AEROSOL AGE

Thanks for the complimentary copy of the June issue of *Aerosol Age*. We have read your journal with a great deal of interest and congratulate you on the fine job that you are doing. We will certainly subscribe.

We are very happy to learn that our industry will have its own trade publication.

I have received the initial issue of *Aerosol Age* and certainly wish to compliment your firm on turning out this publication.

I wish to congratulate you and your on the fine job you are doing in the aerosol industry with a its own.

Would it be possible for all of our salesmen to receive a personal copy of *Aerosol Age*? I think it is a good magazine, easy to read, and seems to be filled with up-to-the-minute constructive happenings in the aerosol industry.

We are installing an aerosol filling plant here in Argentina and have had very good reports about your new publication. We are sure that the material which you have published in *Aerosol Age* will present for us a valstarting a modern aerosol country.

You are to be complimented on making possible *Aerosol Age*. I had no idea that the art had grown to such a magnitude

We are readers of *Aerosol Age* and find it is of considerable help to us in the development of the aerosol business our

I am most interested in your new publication, *Aerosol Age*, and would like to congratulate you on producing a magazine which is now so urgently needed

You have done a grand job — congratulations.

We were extremely interested in your "Three Phase Aerosol" discussion and believe this may provide the answer to a product we have considered for some time.

Your article on "Pressure Testing of Glass Aerosol Products," published in *Aerosol Age*, July 1956, was of great interest to us.

Congratulations, not only on the quality of the publication, but also on its being so prompt, so on time to fill a need.

We must say that we find *Aerosol Age* interesting and attractive. You would oblige us by sending twenty more copies airmail

On a recent visit to one of the large pharmaceutical houses, one of their technical personnel stated that *Aerosol Age* has possibly done more than any other single factor in bringing their management closer to coming out with a pharmaceutical areosol product. This certainly is a lot of credit to your new publication.

We are greatly interested in your new publication, *Aerosol Age*. We should like to arrange to receive it by air mail.

Congratulations on your very fine magazine, *Aerosol Age*, which is filling a very important position in the packaging field.

We have found your magazine very interesting, and you are to be complimented on the amount of material which you are presenting covering the aerosol industry. We wish you the best of success with your new publication.

Aerosol Age is just the "gassing up" medium our industry needs. Contents very interesting, and especially informative to us unfortunates stashed out here in the woods.

It is felt that the aerosol industry is growing to such an extent that there is certainly room for a separate publication covering developments in this industry. I certainly wish you the best of success in this new venture.

"We are a subscriber to your very fine publication AEROSOL AGE.

Good luck to your entire staff. I am one of many who in the last five years have wished repeatedly for an instrument of this type to keep all phases of the aerosol industry informed.

Your articles are very well written and extremely interesting. Keep up the good work.

Your magazine has been discussed by the writer with several fillers in the aerosol industry, and the consensus is that you are to be complimented on doing a fine job

The copies of *Aerosol Age* which you gave me are being studied with much interest and I feel confident that you and your excellent paper will be of much help to me in learning more about aerosol matters.

I look forward to receiving this magazine, as I am sure it will be a great help to us.

Let me congratulate you on your very fine magazine, *Aerosol Age*. I agree that there certainly was room for a magazine of this sort to put in its ar[illegible]arance.

The introduction of your publication *Aerosol Age*, is indeed the most welcome sign of an industry growing up, that we have seen yet.

Your review is the only unpartial and reliable material which we have been able to get hold of to help us in our work as contract loaders in the aerosol field. We

We wish to thank you, and congratulate you at the same time, for the magnificent job you are doing in helping the aerosol industry throughout the world with your *Aerosol Age* publication.

We know Aerosol Age will be a great success, as this is rapidly becoming a "push button" age and the American public is getting more and more conscious every day of the utility of aerosol products in every phase of living

Would like to repeat my comments on the first issue. I think it is one of the finest jobs I have ever seen done covering a specialized field such as the aerosol industry.

Just received the first issue and at first glance it looks most impressive. The layout and contents are extremely good and I think should draw very favorable comment from those interested in the aerosol industry.

Our May issue arrived this morning and you have our congratulations on getting off to a fine start. A good job well done.

The copies of *Aerosol Age* which you gave me are being studied with much interest and I feel confident that you and your excellent paper will be of much help to me in learning more about aerosol matters.

Congratulations on your first issue. As of this writing, have not finished reading, but, have gone far enough to say that I believe you have done a good job.

The first copies of Aerosol Age have just arrived at the plant and creat[illegible] quite a stir

I received the first issue of your publication which indeed was very interesting.

Your magazine has been discussed by the writer with several fillers in the aerosol industry, and the consensus is that you are to be complimented on doing a fine job with your first issue.

.....*Aerosol Age*

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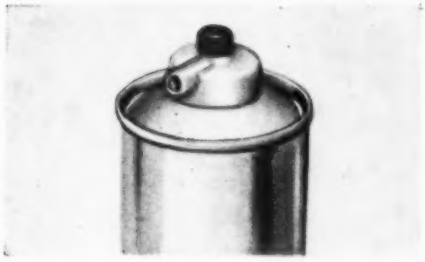
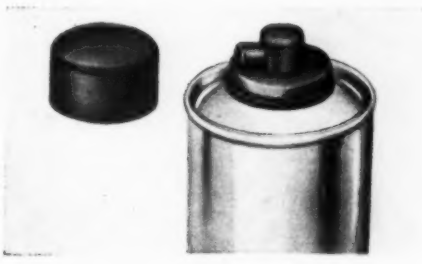
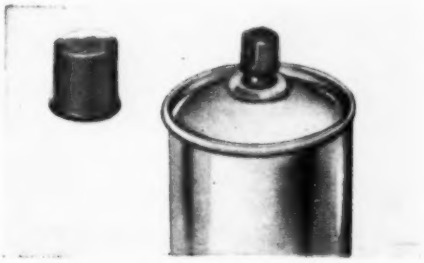
Which CANCO pressure container suits you best?







It's the most complete line in the industry, so you will find exactly what's needed. The Canco one-inch cup opening top, or the individually styled one-piece tops, will accommodate a wide variety of valves and are readily adaptable to all filling and closing equipment in use today. Check these important advantages that add up to substantial economies.

1. **Lower initial cost.** Canco pressure containers cost you less because they're mass-produced on standard high-speed can manufacturing equipment.

2. **Variety of sizes and styles.** Canco now offers you five popular sizes of containers: **3-oz., 4-oz., 6-oz., 12-oz.,** and **16-oz.** — available with either one-inch cup tops, or the one-piece tops, which eliminate costly extra parts in your packing operation.

3. **Canco works directly with valve makers and contract loaders.** This developmental "teamwork" gives you the most economical and efficient package.

4. **Canco has many strategically located facilities.** You're assured of prompt, efficient service in all phases of pressure packaging.

Whether your product sprays, mists or foams, Canco's pressure containers can save you *up to 35%* on your package costs!

COME TO CANCO FIRST !

AMERICAN CAN COMPANY

New York • Chicago • San Francisco

Get knockdown, staydown

impact for your aerosol insecticides

with safe, economical GEIGY

METHOXYCHLOR

GEIGY METHOXYCHLOR "90"

A granular product containing 90% technical methoxychlor and 10% deodorized petroleum distillate for the preparation of aerosols and residual sprays. It is readily soluble in most solvents used in the preparation of household and cattle sprays. Available in 100-pound drums.

GEIGY METHOXYCHLOR "20"

A solution containing 20% technical methoxychlor for the preparation of household sprays, livestock sprays, aerosols and other products requiring small amounts of methoxychlor in the finished solution. Available in 55-gallon drums.

Yes—put impact in your aerosol and spray formulations with the *quick knock-down, positive stay-down* action of Geigy Methoxychlor.

Safe, economical Geigy Methoxychlor helps build your aerosol sales with its reliable action. Methoxychlor is effective on a variety of insect pests. Its low toxicity to man and animals and long residual toxicity to insects makes this *general purpose insecticide* ideal for aerosol applications.

Geigy Methoxychlor is compatible with pyrethrins, allethrin, and piperonyl butoxide.

Geigy *ORIGINATORS OF DDT INSECTICIDES*

GEIGY AGRICULTURAL CHEMICALS • *Division of Geigy Chemical Corporation* • Saw Mill River Road, Ardsley, New York

Pressure Packaging Overseas

Dr. Tom C. Clark of Druk-Pak, Ltd., Zurich writes of the new surge of publicity aerosols are receiving in the European press. 1957 will be an important year for pharmaceuticals

FOR the Christmas trade cigarette lighters, match books, reading glasses, etc., are packaged in special sheaths of silver, anodized aluminum or gold plate, carrying attractive designs and initials. Why not put up some aerosols in this fashion for M'Lady's dressing table, dispensing with the plastic overcoat normally applied to the glass container, and providing a re-usable cover. Except in Italy we have yet to see such packages, which would seem to offer real possibilities. In vain we have searched the cosmetic counters, but the imagination stops with the glass bottle design and variety printing. With aerosol expansion into the cosmetic and now the pharmaceutical field, the container ought to have a little more attention. The re-usable cover is nothing new in packaging. With it you can even put a round bottle into a square hole; and if glass needs protection why not provide it in this fashion.

European Publications on Aerosols

Evidencing Europe's growing interest in aerosols is a rash of articles on all aspects of the subject now appearing in newspapers and trade journals all over the Continent, with Germany leading. Articles have been written by principal chemical, container, propellant and filling equipment manufacturers, with one of the best prepared by E. O. Genzsch of Hamburg, an expert in the field. Three publications: *Parfümerie und Kosmetik*, *Die Neue Verpackung* and *Chemische Ründschaü (Solothürn)* have devoted complete issues to the subject, with good technical articles and extensive advertising by suppliers. Nor are the newspapers lagging. *The Frankfurter Industrie*, *Die Zeit*, Vienna and *Neu Zuricher Zeitung*, Zurich, have each run lead articles about different aerosol products and the potentialities of the package.

The tenor of these articles shows clearly Europe's advantage deriving from access of the industry to ten years of U. S. experience, research and development. It is not a dependence, but they don't need to start from scratch, as did the U. S. industry, and are thus able to avoid some of the costly mistakes—"Kinderkrankheiten," they call them—which infect all new products. The articles also illustrate the European's necessity of settling all problems on the basis of theory and principle before going into practice. Their development is not yet to the point however —which U. S. market experience has disclosed—where they have discovered that things which do not appear workable on paper, sometimes work out quite well in practice. As they have nothing comparable to the U. S. salesman or U. S. corporate selling organizations, their contact with the mass market and the public's buying habits is too remote for anything except a subjective appraisal. When chemists and engineers are called upon to make sales decisions, market development naturally lags. Popular advertising has also still to get under way. But these developments are in the works and progress is in the right direction. The year 1957 should see the real start of aerosols in Europe.

Reflecting this growing interest, propellant and filling equipment manufacturers report increasing orders and inquiries. Farbewerke Hoechst, Germany's propellant producer, has expanded its capacity and is now able to care for domestic and export requirements for all the customary types of fluorinated hydrocarbons, including 114. Their product meets all specifications of the industry and is in every respect comparable to U. S. propellants. Firma Johann Waldherr in Mannheim, Germany's leading producer of aerosol filling equipment and valves, has recently brought out a new reasonably priced line of semi-automatic pressure filling machines—Product Filler, Valve Clincher and Propellant Charger—in which many new features are incorporated. The construction of these machines permits their ready conversion to a fully automatic line at a later date at only a slight additional cost. This equipment

ANOTHER AEROSOL

"Package Pioneer"

by Continental Filling Corporation

This is "Jet-Spray" ... Bon Ami's First New National Product in 43 Years ... Loaded by Continental Filling Corp.

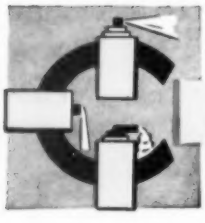
In a quarter-century of packaging and engineering, Continental Filling Corporation has helped "pioneer" hundreds of revolutionary new aerosol products for soap, chemical, cosmetic manufacturers.

This aerosol "know-how" eliminates expensive, time-consuming trial-and-error in perfecting and filling new products.

For products already being marketed Continental offers exceptional quality control methods, economy, laboratory development facilities, and well-equipped, strategically located plants.

CALL CONTINENTAL FILLING CORP. to take advantage of the best in aerosol, pressure, or liquid filling service.

A FREE BOOKLET tells the complete story. Write for your copy today.



CONTINENTAL FILLING CORPORATION

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N. Y. OFFICE: 527 Lexington Ave., New York 17, Phone PLaza 3-3130.
PLANTS in Danville, Illinois, and Hobart, Indiana

should meet the European and overseas demand of the captive filler who wants to fill his own product on his own premises, as well as the larger requirement of the contract loader for fully automatic commercial production machines.

Can-Valve-Tie-In

With the excuse that they eliminate the mounting cup—not possible for foam products—and thereby reduce manufacturing costs — not yet reflected in their prices—a number of Europe's container manufacturers have gone to containers with staked-in valves. And the valves all seem to be from one manufacturer. We question the wisdom of such a policy for an infant industry.

In the first place, it stifles competition. The buyer cannot shop separately for his can and his valve, but has to buy both together, paying a combination price. He may like the can but prefer another valve, or visa-versa, but is stopped from free choice. Also, he has no possibility of comparing can and valve prices. The elimination of free choice and the opportunity to shop stifles market expansion.

In the second place, cans with staked-in valves are all delivered with open bottoms, and whether the filler clinches on the valve or rolls on the bottom, he still has an extra operation. Of course, he takes the risk of leakers with either operation, but the can maker escapes responsibility for the bottom seam, customarily considered a part of the container and the point most exposed to produce corrosion. With pressure filling, an extra operation is involved, for after the product has been filled and the bottom rolled on, the can must be inverted for the propellant charge. By this can-valve-tie-in practice the filler with pressure equipment suffers an increased operating cost. He has no price advantage from the purchase and is sometimes unable to choose a valve suitable for more rapid pressure filling.

In the third place, good operating practice calls for a factory test of each container and valve before delivery. As the bottom is open, the container manufacturer saves this testing operation, but we have often wondered how the function of a staked-in valve can be satisfactorily factory tested.

The valve-can-tie-in goes even farther if a recent report is correct. It appears that with an increasing demand a company in one of the Scandinavian countries has recently commenced the manufacture of aerosol containers—we understand with the standard one inch opening and not a staked-in valve—and has tied one particular valve to his cans. To protect the can manufacturer and his new product, the Government restricts can imports by quota or by assessing an excessively high duty. This is called "saving foreign exchange." As a result the can manufacturer comes up with a monopoly on the market. Protection of domestic "infant" industries makes sense on a short term basis. But in this case the valve is imported. Because of the valve-can-tie-in and the necessity of obtaining a license for its import, this valve manufacturer, all too innocently, also benefits from the same monopoly on his valve.

Local fillers have their hands tied. They cannot buy other less expensive valves according to their choice, and even were they able to get an import license and import other valves, the local can manufacturer would not deliver his aerosol cans without the particular valves of this one valve manufacturer. This goes even farther than the can and staked-in valve and gives some indication of the problems faced by the European industry. We submit, this may be good short sighted business for these can and valve manufacturers, but it seems a peculiar way to develop a mass consumption product of an infant industry in a small country.

Pharamaceuticals

Along with the U. S., Europe also looks for most substantial developments in this field in 1957. There are reports about a new German insulin product administered orally by aerosol therapy. Used to date in clinics and hospitals with compressed air, they are now seeking the proper package which an ambulatory patient can carry around in his pocket. With the right kind of propellant and a metering valve, this should be a natural for the pressurized aerosol container. At the London Medical Equipment Exposition in November, along with a number of other medicinal aerosols, an interesting new anti-biotic powder, "Calmic," was demonstrated which is said to have undergone extensive tests and to have the approval of British surgeons for use in suture sewing as well as for use on open wounds and burns. A new bandage spray called "Globenicol" is scheduled for appearance in Holland within the near future from the well known firm Koninklijke Nederlandsche en Spiritusfabriek N.V. Delft. These are only a few signs of what we believe will be the most rapid and interesting development in European aerosols during 1957.

At this season of the year we want to thank our readers for their interest and to express the hope that we may continue to merit their indulgence. We are particularly grateful for the many letters and comments we have received and trust our replies have been helpful. Also, we want to compliment the publishers of *Aerosol Age* for having launched in 1956, full born, the only complete and exclusive publication devoted to our young and healthy industry. To all we extend best wishes for 1957 and all compliments of the Season.

•

CanCo Sales Up, Profits Off

The American Can Co., New York, last month announced an increase in sales for the third quarter of this year of 2.9%, to a figure of $247,301,971 against $240,273,530 in the corresponding period last year. Net income for the first nine months amounted to $28,243,381, 2.3% less than the $28,932,161 reported in 1955. Company spokesmen blamed higher costs of tinplate, labor, and other materials, a cool-weather slump in summer sales, and heavy advance buying in anticipation of the steel strike as factors affecting the profit decrease and third quarter sales figure.

Whatever it does,
your aerosol
does it better with

DU PONT

"FREON"* *propellents*

BECAUSE YOU HAVE HAD THE BENEFITS OF DU PONT'S

- Fundamental research for the aerosol industry
- Marketing data plus formulation and testing know-how
- Quick delivery of highest-quality products

There's no extra charge for the extra services you get when you use Du Pont "Freon" propellents for your aerosol product. Only Du Pont offers you such a complete background of technical and marketing know-how. For more information, or assistance, write E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division 1312, Wilmington 98, Delaware.

DU PONT

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

*"Freon" is Du Pont's registered trademark for its fluorinated hydrocarbon propellents.

Consultant's Corner

Motive Power From Aerosol Propellants

By Robert A. Foresman, Jr.

WHILE it may be of more interest to the suppliers of refrigerants than to the aerosol industry, it strikes me that there are possibilities in pure packaged propellants that, up to the present, have been largely unexplored. A container of propellant is exactly like a storage battery in that it is a reservoir of energy available to do work. While from a standpoint of economics it is not quite in the class with the electrical batteries, it has some unique possibilities wherever gas pressure is a desirable form of energy.

These properties have been utilized to some extent in various pieces of equipment such as the fog horn and various fire alarms actuated by propellant pressure. However, it seems to me that the application of some good design principles is all that is necessary for the development of a whole host of articles powered by propellant gases.

Back in 1950 I designed a garden sprayer using a 12 oz. can of propellant to supply the pressure in place of a hand pump, but abandoned work on it because of the economics. Such an apparatus might very well be accepted by the public today, since expense is apparently no longer an object where such equipment is concerned if sales of power mowers, for example, represent any criterion.

Nebulizer type sprayers of all kinds using propellant pressure are a possibility where sprays of a nature unsuitable for actual aerosol packaging are desired.

Ever since the first disposable cans of refrigerant gases were packed, it has seemed to me that it should only be a matter of time until some enterprising toy designer discovered the possibilities of toy steam engines that would run without added heat, and made possibly with transparent plastic parts.

The whole realm of educational toys offers unique opportunities for propellant as a power source. Even in the applications where a simple air pump incorporated into the mechanism might serve just as well, the attraction of a storage source of power would be great. Valves and other controls which could be arranged in knock-down type kits for assembly by the child (or his father) could serve to teach some elementary facts of elastic fluid mechanics very effectively.

It is easy to visualize miniature die cast or plastic molded turbines of either single or multistage types, even to the extent of showing the difference between axial and radial flow types as well as between impulse and reaction types. Coupled with the turbines could be miniature generators with lamps and motors which would illustrate the steam generation of current and its use.

Jet engines catch the fancy of most small fry and it would be entirely possible to make up an assembly which would illustrate the compressor, ignition and thrust regions of a jet engine to an extent completely unknown in the toy market at the moment. The principles of the internal combustion engine could be exceptionally well observed from a properly designed transparent plastic model, although of course some liberties with actual flow cycles would be necessary in the construction of such models.

The refrigeration cycle is probably the least understood of all mechanical operations common to our everyday life. It would be relatively quite simple to make up a toy demonstration kit showing the compression-evaporation cycle with the movement of heat from one point to another. This unit could be hand operated so that the necessity for externally applied energy would be brought out.

Pure pressure physics demonstration sets equivalent to the present chemistry sets are a real possibility. Force vs. pressure, Bernouli's theorem, vapor densities, and temperature-pressure relationships could all be shown with simple and inexpensive pieces of equipment.

Aside from the educational toys, there are all kinds of possibilities for toy cars, trains, or boats driven by propellant - actuated power plants. Not the least attractive feature of these toys would be their realistic sound effects if driven by a piston type engine.

These are only a few of the possibilities for the application of propellant power. Many others can be brought to mind and as the field is explored, more and more will present themselves.

It is unlikely that the demand for packages of propellant for the uses mentioned would ever grow to the extent that has been true for more classical types of aerosols. However, if the market should ever amount to any appreciable percentage of the present hobby and toy market, on a simple initial sale basis the number of units involved would be well worth while. Certainly the sales area is entirely untapped at present, and while the aerosol industry is probably not the one to exploit the field directly, a little encouragement on our part might get the right people interested.★

PACKAGING to Sell Better and Cost Less

For Your Packaging Requirements

Aerosol PACKAGING

Custom Packaging of your product

We will prepare your product for market, develop specialized formulations if required, plan labels, create display pieces and engineer your packaging needs in glass, plastic and metal containers.

Contract Filling

EVEREADY'S experience over the years has been in the development of many diversified products for a variety of basic and specialized uses. Find out how our technical experience, our modern plant and warehouse can serve as your packaging facility . . . at a known direct cost.

Pressure Loading

Through the valve. Under the cup.

Cold Loading

Metal, Glass, Plastic.

New Product Development

We like working with the new product manufacturer . . . helping him to develop a finished product that will gain wide acceptance in a highly competitive market. Our specialized "know how" and the use of cost-saving equipment of our own design and manufacturing give our clients, whether large or small, a competitive advantage. You are assured of getting continuous, prompt delivery on small or volume runs at the highest quality control standards.

Conventional Liquid PACKAGING

Eveready now offers liquid packaging in conventional (non-aerosol) containers as a "plus" service to the aerosol merchandiser. Now you can ship combinations of aerosol and conventionally-packed products from one central location—Eveready's new plant. That keeps handling and freight costs down . . . gives you a dependable and economical method of handling tie-in promotions, optional packagings of the same product. *Eveready* can now provide any combinations of packagings: aerosol or liquid in metal cans, glass or plastic bottles.

Our Central Location Means Freight Savings, Quicker Deliveries

Eastern Seaboard and West Coast Packagers use us as a dependable 2nd source of supply in the great Midwest market. Our new warehouse permits us to handle your finished products in the most flexible manner—including drop-shipping.

We invite your inquiries on ways to package *your* product to *sell better* . . . and, in many cases, at lower cost. Our packaging engineer and chemist will work with you to develop proper formulations, the most economical and *most saleable* packaging.

World's Largest Aerosol Package—65 lbs. Net
"Small or Large—We Pack Them All"

Call or write us . . . we'll be happy to bring our wide background to your packaging problems

EVEREADY Pressurized Products, Inc.

"Engineers of Packaged Selling"

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Winners in C. S. M. A. Aerosol Package Contest

WINNER of the top award in the 1956 Aerosol Package Contest, sponsored annually by the Chemical Specialties Manufacturers Association was a room deodorant and air spray, "Air Spray by Lactopine", entered by Swiss Pine Importing Co. of New York. In winning the top award, it was judged the best of 200 aerosol products of all types entered by aerosol packagers from all parts of the world. In addition to winning the grand prize, "Air Spray" also finished first in the room deodorant classification.

Winners in nine other classifications included: *Insecticides*, "Mothproofer", a mothproofer by Avon Products, Inc., New York — *Paints and Enamels*, "Krylon Spray Enamel", a spray enamel by Krylon, Inc., Morristown, Pa. — *Household Products*, "Bib", a window cleaner by Societe Elekal, Paris, France — *Shaving Creams*, "Rex Witch Hazel Shaving Cream", a shave cream by Rexall Drug Company, Los Angeles —*Hair Preparations*, "Matinee Hair Spray with Lanolin", a hair spray by Scent De Paris Co., Toronto, Canada—*Personal Products*, "Tartan Sun Lotion", a sun tan lotion by McKesson & Robbins, Inc., Fairfield, Conn.—*Snows & Novelties*, "Christmas Snow", a Christmas Snow by Robert J. Kerr Chemicals, Inc., Park Ridge, Illinois—*Industrial Products*, "Easy Way Plastic Spray", a plastic spray by Easy Way Products Corp., Cleveland, Ohio—*Glass and Plastic Aerosols*, "Angelique Black Satin Spray Cologne", a perfume spray by Angelique & Co., Inc., Wilton, Conn.

Entrants of winning packages were to receive award plaques at the 43rd annual meeting of CSMA. Presentations were to be made at the luncheon, Tuesday, December 4th, by Frederick G. Lodes, chairman of the Aerosol Award Committee. All of the entries in the 1956 Contest were to be on exhibit at the meeting.

This is the fifth year in which C.S.M.A. has sponsored such an Aerosol Package Contest. The number of entries this year set a new record. The competition will be continued at the 1957 meeting to be held in Hollywood Beach, Fla., next December.

Judges for the 1956 competition, pictured below, were: (Left to right) Donald Deskey, authority on package design, Donald Deskey Associates, New York: Edward Molyneux, vice president of Cunningham & Walsh, Inc., New York: Julien Elfenbein, editor, Haire Publishing Co., New York: Miss Antoinette Donnelly, beauty editor of the *New York Daily News*, New York: and John A. Warren, authority on package design, American Management Assn., N. Y.

A Word of Appreciation...

THE following suppliers have helped make it possible for the aerosol industry to have its own specialized publication, dealing intensively and exclusively with matters of direct interest to aerosol fillers and marketers. We appreciate their generous support of the advertising pages of the first six issues of AEROSOL AGE.

Aeratom AG
Aerosol Process Co., Inc.
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Eveready Pressurized Products, Inc.
Emson Research Co.

Fairfield Chemical Div.
Felton Chemical Co.
Florasynth Laboratories, Inc.
Fluid Chemical Co.
Foresman, Robert A., Jr.
Frank Organization, The Walter
Fritzsche Bros.

General Chemical Div.
General Electric Co.
Givaudan-Delawanna, Inc
Geigy Agricultural Chemicals

Hydrawlik Co.

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National Spray Can Filling Corp.
N. J. Aerosol Packing Corp.
Newman-Green, Inc.

Oil Equipment Laboratories, Inc.
Old Empire, Inc.

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Pennsylvania Salt Mfg. Co.
Peterson Filling & Packaging Co.
Polak & Schwarz, Inc.
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Precision Valve Corp.
Prentiss Drug and Chemical Co., Inc.

Regal Chemical Corp.
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Risdon Mfg. Co., The
Rohm & Haas Co.
Rose Co., Gene

Schimmel & Co.
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Schueler & Co.
Seaquist Manufacturing Corp.
Skandinaviska Aerosol AG
Solvay Process Div.
Stalfort of Pa.
Stalfort Pressure-Pak Corp.
Sterling Seal Co.
Struthers & Co.
Sun Tube Corp.

Tube Manifold Corp.

Valve Corp. of America
van Ameringen-Haebler, Inc.
Velsicol Chemical Corp.

Wallace Co., The
Wallerstein Co.
West Penn Mfg. & Supply Co.
Western Filling Corp.
S. S. White Dental Mfg. Co.
White Metal Mfg. Co.

To you in the aerosol field who have welcomed this new magazine, and perhaps found it of help, the greatest service you can do to assist AEROSOL AGE to grow is to let these suppliers know you appreciate the interest they have taken in this new and needed voice for a dynamic, expanding industry.

AEROSOL AGE

P. O. Box 31 **Caldwell, N. J.**

NEWS of Pressure Packaging

Acrolite Names Gottheimer

Acrolite Products, Inc., West Orange, N. J., last month named Irving Gottheimer, merchandising director for the company's entry into the drug and cosmetic field. He had been in charge of merchandising "Rybutol" for Rexall Drug Co.

•

Stalfort Tours Planned

Tours of the newly expanded plant of John C. Stalfort & Sons, Inc., Baltimore, will be a feature of the CSMA convention Dec. 3-5, it was announced by Charles E. Beach, Stalfort vice-president and general manager, and chairman of the CSMA's Aerosol Division. Transportation during and after the convention will be furnished for the 30-minute ride from the Mayflower Hotel, Washington, site of the convention.

The addition includes a research and development laboratory, and the expanded high-speed filling lines. Technicians at the plant will be on hand to show and explain the filling lines, multi-stage chillers and dryers, refrigerated mixing tank, and other technical phases of Stalfort's operations.

•

Bon Ami Elects Terry V.P.

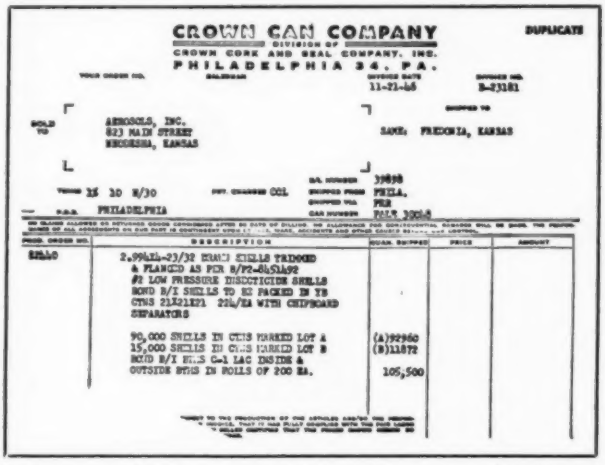
Dr. Daniel H. Terry, who as research director developed the formula for "Jet Spray Bon Ami," was recently elected vice-president in charge of research and development by the Bon Ami Co., New York. Prior to his joining Bon Ami in 1952, he was associated with General Dyestuff Corp., Antara Products Division, General Aniline & Film Corp.; and E. I. Du Pont de Nemours & Co.

•

Bottner Joins Revlon as V.P.

Irving J. Bottner, formerly vice-president and treasurer of Lewyt Corp., has been elected vice-president and treasurer of Revlon, Inc., New York.

Invoice a Landmark in History of Aerosol Industry



CROWN CAN COMPANY
DUPLICATE
CROWN CORK AND SEAL COMPANY, INC.
PHILADELPHIA 34, PA.

11-21-46

AEROSOLS, INC.
823 MAIN STREET
HESSTON, KANSAS

SAME: HESSTON, KANSAS

2 30 R/30 PHILA.
F.O.B. PHILADELPHIA

PROD. ORDER NO.	DESCRIPTION	QUAN. SHIPPED	PRICE	AMOUNT
52140	2.99ZL-23/32 HAMI SHELLS TRIDOMED & FLANGED AS PER B/P2-8&51A92 #2 LOW PRESSURE INSECTICIDE SHELLS SEND B/I SHELLS TO BE PACKED IN TB CTNS 21X21X21. 22&/BA WITH CHIPBOARD SEPARATORS			
	90,000 SHELLS IN CTNS MARKED LOT A	(A)92960		
	15,000 SHELLS IN CTNS MARKED LOT B	(B)11372		
	SEND B/I H.S C-1 LAC INSIDE & OUTSIDE STNS IN ROLLS OF 200 EA.	105,500		

The date of this invoice, Nov. 21, 1946, marks the birth of the lightweight, low-pressure, aerosol can industry. It was on that date that Crown Cork & Seal Co., Inc., shipped from Philadelphia 104,832 drawn cans (total of items A and B) with bottoms. The shipment went to Aerosols, Inc., Neodesha, Kansas, where Dr. Lyle D. Goodhue, pioneer in World War II development of high-pressure, heavy gauge containers of insecticides, supervised packaging of the first successful inexpensive throwaway aerosol containers for the mass consumer market.

Marking its ten year anniversary in the aerosol industry Crown notes that the first containers were nothing like the intricately engineered, special-purpose packages of today.

Associated Brands to Move

H. Bruce Hagler, president of Associated Brands, Inc. has announced the purchase of a new plant at 50 Wallabout Street, Brooklyn. They plan to move into the new plant shortly after the first of the year.

The building, of fireproof brick and concrete construction, occupies 100,000 square feet and will provide extensive research facilities. It will house three complete twin automatic aerosol lines for both cold and pressure filling. All equipment is stainless steel, including the company's own de-ionized water unit. Storage tanks of 40,000 gallon capacity allow proper aging of concentrates.

Associated Brands, Inc. have been in the packaging business for over 38 years and were pioneers in fully automatic packaging of glass aerosol bottles. The company restricts its filling operations to cosmetics and pharmaceuticals exclusively, so that there is no possibility of contamination from other products. The new plant will also include three automatic packaging lines for liquids, semi-liquids and solids other than aerosols, for customers who want to have combination orders.

Associated Brands to occupy new 100,000 sq. ft. aerosol filling plant in Brooklyn.

Thinking

Insecticides
47,232,131 Units

Room Deodorants
32,110,180 Units

Other Personal Products
14,220,783 Units

(perfumes, colognes, shampoos, personal deodorants, sun tan oils, hand lotions, etc.)

Paints
7,723,368 Units

Let General Chemical help you get

Here is your shortcut to aerosol marketing:

Capable Contract Fillers

You don't have to invest a cent in plant, special equipment or personnel! There are many capable Contract Fillers throughout the country who will put up your product in aerosol form for test marketing . . . or sustained volume production.

These Contract Fillers offer a wealth of accumulated experience that is invaluable to the new aerosol marketer. And General Chemical stands ready to supplement their service with helpful market data . . . with expert technical assistance in formulating your product in aerosol form . . . and in providing the right propellant for your product.

Here are the right propellants for every aerosol need:

genetron®
AEROSOL PROPELLANTS

About Aerosols?

1955 sales figures, as reported by Chemical Specialties Manufacturers Association, Inc.

Shaving Lathers
45,387,375 Units

Hair Lacquers
53,790,785 Units

Mothproofers
8,743,351 Units

Christmas Snow
6,818,717 Units

into this high-profit field the low-cost way!

First choice of leading contract fillers and aerosol marketers for formulating household, drug, cosmetic, agricultural, industrial and other types of aerosol products, "Genetrons" provide the right pressures, the right compatibilities, for every aerosol product and every type of container.

CALL GENERAL CHEMICAL TODAY! For helpful facts and figures on the aerosol market, including data on many promising new types of aerosols . . . for help in developing the right propellants and formulations for your product–*without cost or obligation!* Ask for our special brochure: "How To Push Up Profits With Aerosols." It contains a list of Contract Fillers who can help you get into aerosols the easy, economical way!

Write to
"Genetron" Department
GENERAL CHEMICAL DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

GC Allied Chemical

Basic Chemicals for American Industry

Prentiss Acquires Deodorant

Exclusive sales rights to "Meelium" deodorant were acquired last month by Prentiss Drug & Chemical Co., Inc., New York, it was announced by John Stoddard, vice-president. According to the announcement, Meelium was one of the first true deodorants offered to aerosol fillers, and one of the few products that has been studied toxicologically. Used as recommended, it has the property of destroying most organic and inorganic odors associated with humans, animals, foods, etc.

Prior to the acquisition by Prentiss, Meelium had been used exclusively since 1951 by one of the first and largest aerosol contract fillers. It is estimated that more than 10 million aerosol deodorant units containing the product have already been marketed.

Prentiss will offer Meelium to the aerosol filling trade in the form of a concentrate. For aerosol use the concentrated Meelium is diluted with deodoroized kerosene. Diluted as recommended, an essentially odorless product is obtained. While Meelium has been marketed in unscented form in many instances, Prentiss recommends the addition of small quantities of perfume oils to enhance consumer appeal.

Mary Saunders

•

Geigy to Spray Olympic Site

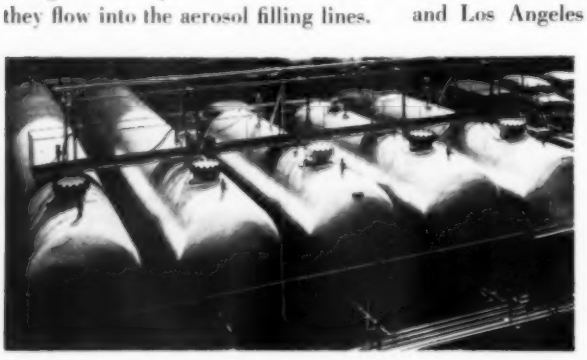
Olympic Village, near Melbourne, Australia, which is equipped to house and feed 6000 athletes and officials during the 1956 Olympic games, has received extensive spraying to control flies during the period of the Games. Prior to occupation, the village was sprayed with Geigy "Diazinon," a pesticide which offers prolonged residual control of flies.

Tank Installation Completed

G. Barr and Co., Chicago, early last month completed the installation of five new propellant storage tanks, with a combined capacity of 380,000 pounds, as part of a general expansion program. The installation is believed by the company to be the largest ever made in the aerosol industry for the stocking of propellants.

From the new tanks the propellants are piped directly into the plant's refrigeration system, from which they flow into the aerosol filling lines. The new installation brings the plant's total storage capacity to nearly 900,000 pounds, with additional facilities provided by railroad cars parked on the company's siding.

The new storage system will serve to expedite traffic on the rail siding when propellant is shipped in. Each of the two larger permanent tanks holds 100,000 pounds of propellant, and the three smaller tanks hold 60,000 pounds each. Similar permanent supply tanks have also been installed at the company's New York and Los Angeles plants.



The new propellant storage facility of G. Barr and Co. at its Chicago plant. Believed to be the industry's largest, the tanks have a combined capacity of 380,000 pounds of propellant.

Mary Saunders to Peterson

Miss Mary Saunders has recently joined the research department of the Peterson Filling & Packaging Co., Danville, Ill. A graduate of Indiana University, she has had considerable experience as an analytical and development chemist. From 1944 to 1954 she was in the pigments research and film department of E. I. du Pont de Nemours & Co., Wilmington, and in 1955 joined the Liberty Powder Co., a subsidiary of Olin Mathieson Chemical Corp.

•

Congo Pyrethrum Plant

The Belgian Congo's first pyrethrum extraction plant, Chimiphar, at Bukavu, recently started production on a site that until recently was a forest of wild banana trees. It is under the direction of Alois Saelens, its builder and owner, who arrived in the United States last month to confer with American pyrethrum processors who depend on African sources for the insecticide constituent.

Mr. Saelens stated that his installation is prepared to extract pyrethrins, the active ingredient of the pyrethrum flowers, from 2.7 million pounds of blossoms a year. He said that extraction of pyrethrins from the flowers at the point of growth makes unnecessary the shipment of baled flowers, greatly reducing shipping costs. The United States imports virtually all of its pyrethrum requirements from either British East Africa or the Belgian Congo.

•

PMMI Elects New Officers

New officers and directors of The Packaging Machinery Manufacturers Institute were elected at PMMI's annual meeting recently at Skytop, Pennsylvania. W. B. Bronander, Scandia Manufacturing Co., was elected president. Other new officers include first vice-president, J. H. Richmond, Potdevin Machine Co.; E. J. Abendschein, Chisholm-Ryder Co. of Pennsylvania, second vice-president; K. B. Hollidge, Arthur Colton Co., third vice-president and chairman of The Packaging Machinery & Materials Exposition Committee.

Aerosol Spray-Tan for U.S.

Maxime N. Neama, vice-president of Cosmopolitan Brands, Inc. New York City, and an executive of Alvex A.G., 85 Rue de Courrelles, Paris, returned to France November 14th after a trip to the United States, in the course of which he completed negotiations for the purchase by Alvex of the American product Spra-Tan formerly marketed by Clay Glover.

Alvex, who have successfully introduced Spray-Tan on the European market, plan to convert their new American sun-tan preparation to an aerosol product to appear on the market in the summer of 1957. Spra-Tan, incidentally, was brought out ten years ago by Clay Glover and is just as old as the American aerosol industry. Spray-Tan, marketed by Alvex in Europe has been extremely successful all over the continent, having sold some 1,500,000 units this past season.

Mr. Neama's visit to the United States also included a side trip to Miami and Hollywood, Florida in the course of which he conducted a market survey on the possibilities for sale of aerosol sun tan products in the United States.

Another Paris visitor to the offices of *Aerosol Age* this past month was

M. N. Neama

Marcel Franck of the firm of Marcel Franck, Paris, who visited a number of American suppliers of valves, propellants, containers, etc. to check up on latest developments in aerosol materials and packaging methods. The Franck firm is perhaps the best known French manufacturer of perfume atomizers. Mr. Franck voiced the opinion that aerosol perfumes have a tremendous future and suggested that, in a matter of three or four years, aerosol perfumes may well dominate the perfume market, particularly in the field of the lower-priced fragrances.

Revlon's Earnings Set Record

Revlon, Inc., New York, last month reported that its sales and earnings for the third quarter and the nine month period of this year have set records. Net earnings for the third quarter were $2,123,000, bringing the total for the first nine months to $5,986,000. Revlon's net sales for the quarter were $20,519,000 or 73.4% above the 11,831,000 figure for the same period last year.

•

Shulton Opens Toronto Unit

Shulton, Inc., recently opened its new toiletries plant at Don Mills, Toronto, Ont. Occupying 32,000 square feet on four acres, the new plant will serve as headquarters for all the firm's sales and manufacturing in Canada. George M. Thomson is Canadian manager for Shulton.

•

Corday Controller Dies

Albert S. Kronenberg, controller of Parfums, Corday, New York, recent entry into the field of pressurized perfumes, died last month of head injuries suffered in a fall. He was 45.

•

New Research at Battelle

A research project on the basic behavior of moving aerosols is underway at Battelle Institute, Columbus, Ohio, under a $135,000 contract with the Chemical Corps of the U. S. Army. The project, under the direction of Dr. J. Mason Pilcher, will study changes that occur in moving aerosol streams, methods of diluting moving aerosols, and accuracy and repeatability of aerosol sampling procedures. Much of the sampling to determine particle size distribution will be carried out with a form of the cascade impactor previously developed by Battelle for the Chemical Corps.

Tentative plans which had been under consideration to proceed with development at Battelle of a reasonably priced "cascade impactor" device for measuring aerosol particle size are reported to have been abandoned. The cost would have been in the neighborhood of $25,000, and insufficient financial support was guaranteed by the aerosol industry to finance the necessary work.

TGA Unit Lists Agenda

A number of papers relating to the formulation of aerosol products will be among those presented to the Scientific Section of the Toilet Goods Association at its 24th meeting on Wednesday, Dec. 12 at the Waldorf-Astoria Hotel, New York. The list includes one titled "Zirconium Oxychloride — A New Ingredient for Antiperspirants," by J. C. Ervin, E. G. Helton, E. W. Daley, of the toilet goods division of Procter & Gamble Co., New York. Donald H. Kirby, of the research and development laboratory of John H. Breck, Inc., will give "A Method for Determining the Waving Efficiency of Cold Permanent Wave Lotions"; and there will also be a report on "Dermatological Evaluation of Perfumes of Low Sensitizing Index," by Dr. Raymond A. Osborn, Dept. of Dermatology, Georgetown University Medical Center; Dr. Thomas D. Tusing, Hazleton Laboratories; Dr. Francis P. Coombs and Edward P. Morrish, Firmenich, Inc.

•

Shield Chemical Moves

Shield Chemical Co., contract aerosol packager, has moved into new quarters at 50 Brook Road, Needham Heights 94, Mass. The company, formerly Safe-T-Chemical Co., had been located in Allston, Mass. The firm's new telephone number is NEedham 3-1433.

•

CanCo Buys Plastics Co.

The American Can Co., New York, recently announced the purchase of the Pittsburgh Plastics Corp., West Pittsburgh, Pa., a manufacturer of injection molded plastics products. Terms were not announced.

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The wonder insecticide that is the most toxic to insects and the least toxic to humans and warm-blooded animals of *ALL* currently known insecticides.

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Try these Prentox Pyronyl and Pyrethrum Pest-Tested Products

Pyrethrum Extract #20 · Pyrethrum Extract #100 · Pyrethrum Extract 20%
Pyronyl #20 · Pyronyl #100 · Universal Concentrate · Pyronyl #101
50-5 Oil and Emulsifiable Concentrate · 40-5 Concentrate · 20-8 Concentrate
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Ad Campaign Stepped Up for "Rise" Shave Cream

Carter Products, Inc., New York, last month began a stepped up campaign for their two new "Rise" shave creams. Following the lead of Gillette, which last year brought out safety razors for three types of beards, Carter recently introduced two new formulations of "Rise," the "extra heavy with lanolin" and the "extra cool with menthol."

•

Propellant for 3-Phase Aerosols

Culminating two years of cooperative research with one of its clients, Continental Filling Corp., Danville, Ill., announces the commercially sucessful use of petroleum hydrocarbons in propellant for three-phase, low pressure aerosols. The product is now being marketed nationally.

Continental has also now completed installation of new aerosol cold filling equipment for hair lacquer in cans, and modernized its cold fill hair lacquer line for bottles.

Installation of new equipment and modernization of plant filling techniques has speeded up Continental Filling Corporation's production at plants in Hobart, Indiana and Danville, Illinois.

•

CSMA Committee Meeting Set

The general entertainment committee of the CSMA for the 44th annual meeting of the association at the Hollywood Beach Hotel, Hollywood, Fla., Dec. 1957, was to hold a meeting at 4 p.m. Monday, Dec. 3 in the Cabinet Room of the Mayflower Hotel in Washington. Committee members were asked to refer to CSMA bulletin No. 129-56 of August 17.

•

Food Store Sales Up

Sales of aerosol products in grocery stores hit a new peak in 1955, it was reported in a recent issue of *Food Field Reporter* as quoted in an October bulletin of the CSMA. According to the report, sales of pressurized household insecticides in food stores hit a figure of $18,770,000 in 1955, aerosol deodorizers $10,660,000, and aerosol shaving creams $7,960,000. This total for aerosol shaving creams compared with a total domestic consumption of $27,350,000 for all types of shaving creams.

•

Newman-Green to Expand

Newman-Green, Inc., Addison, Ill., aerosol valve manufacturer, has announced the beginning of construction on a new 8000 square-foot addition to its Addison plant. The new building will occupy part of an 80,000 square-foot area that, when fully developed, will triple Newman-Green's current production.

In keeping with the architecture of the industrial park at Addison, the new addition will be one story, and will include two truck loading docks. Plans also include a storage area for raw materials and finished products.

•

Impede Cont. Can Merger

Continental Can Co., New York, last month was accused of violation of the anti-merger statute of the Clayton Act by its merger Oct. 26 with the Robert Gair Co. The Government, in an anti-trust action filed in the N. Y. Federal Court, requested an order directing Continental Can Co. to divest itself of the stocks and assets of Gair, a major manufacturer of paperboard, paper containers, and flexible paper.

The Government charged that, by the acquisition of Gair facilities, Continental Can Co. had eliminated a substantial competitor. Lucius D. Clay, Continental Can board chairman, issued a statement denying that the merger violated either "the letter or the spirit" of the Clayton Act, and asserting that it did not "measurably lessen competition in the areas served by the company." He said that the suit had not been discussed with either company prior to notification of the Government's anti-trust action.

•

Goldschrafe to New Post

Helene Curtis Industries, Inc., recently appointed Carl Goldschrafe to the newly created post of director of packaging. In his new position he will coordinate all packaging activities of Helene Curtis products.

•

Avon Splits Common Stock

Avon Products, Inc., Suffern, N. Y., recent entrant into the aerosol field, last month announced an increase in its authorized common stock from 1.8 million shares of $5 par to 3.6 million shares of $2.50 par. Company earnings for the first nine months of 1956 were reported at $4,699,970, an increase of 31.2% over last year.

•

To Package for Acrolite

Acrolite Products, Inc., West Orange, N. J., have announced completion of arrangements for packaging Acrolite sprays in Sweden. Skadinaviska Aerosol of Sweden, under an agreement completed through Pegasus International of New York, will begin immediately to package and market Acrolite's "Ink-O-Saver," an anti-skinning spray for printing ink, in all Scandinavian countries. The announcement said that other product arrangements will follow.

Acrolite makes 21 aerosol products for the graphic arts trade, currently marketing them in 18 foreign countries.

•

Colgate Names Ad Agency

The Colgate-Palmolive Co., New York, recently named Ted Bates & Co. to handle advertising for its aerosol shave cream "Palmolive Rapid Shave."

you are cordially invited

to visit our suite

at the Mayflower Hotel

Washington, D. C.

during the C.S.M.A. show

FOR THE BIG NEWS
WE ARE ABOUT TO
ANNOUNCE SOON

Aerosol Research Co. 743 Circle Ave., FOREST PARK, ILL.

TGA Directors Meet in N. Y.

The Board of Directors of the Toilet Goods Association, Inc., at its recent meeting at the Waldorf-Astoria Hotel, New York, heard a report on possible legislation to be introduced both in state legislatures and in Congress that will affect the cosmetics industry. Included were measures on excise tax and chemical additives. The board also announced plans to canvass members on the possible attendance at an annual convention to be held at a resort "in the earliest possible year."

The board meeting scheduled for Nov. 29th was cancelled to enable the directors to attend the Federal excise tax hearings to be held in Washington. Next scheduled meeting of the board was announced for January 31, 1957.

•

Owens-Illinois Appoints Three

The Owens-Illinois Glass Co., Toledo, recently announced three appointments in its Glass Container Division. Richard A. Cosh, company vice-president and general factories manager of the division, was named assistant general manager of the division and a member of the firm's planning and research committees. Miles G. Beishline, division vice-president, and production manager, was named division factories manager to succeed Mr. Cosh; and Eliot Marr, manager of the Los Angeles plant, was appointed division vice-president and production manager in Toledo. The latter two were also named to the division's research and directing committees.

•

Babbitt Elects New Director

B. T. Babbitt, Inc., New York, recently announced the election of John J. Bundschuh to the board of directors. He is vice-president and director of J. M. Louden, Inc., New York, and a director of Easterh Industries, Inc.: Buckeye Corp., Stylon Corp., and Allied International Investing Corp.

•

Tru-Pine Changes Ad Claim

The Federal Trade Commission last month announced the signing of a stipulation agreement with the Tru-Pine Co., Chicago, manufacturer of "Sprayway Room Deodorant," in which the company agreed not to represent its product as "effective in reducing the danger of, or in preventing the spread of, certain ailments such as colds, sore throat, or tuberculosis."

The agreement was one of a number for settlement purposes only, and the FTC stipulated that they do not constitute admissions by the parties that they have violated the law.

S. B. Penick Adds to Staff

S. B. Penick & Co., New York, have announced three additions to the company's Lyndhurst staff plus the appointment of Pierre Papazian as a research librarian. James B. Philip, formerly with Thomas A. Edison, Inc., will work with the product development staff: Gerald S. De Angelo, analytical control laboratory; and Donald W. Sands, formerly with DuPont, was assigned to the production group.

APAL Announces

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Complete Facilities for Custom Filling or Private Label

MODERNAIRE TECHNIQUES

Serving the North and Northeast with the most modern equipment for Pharmaceutical and Chemical Aerosol Specialties.

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Fortified with unrivaled experience in the development of perfume oils for the cosmetic, pharmaceutical, insecticide, soap, sanitary and other industries, MM&R is uniquely equipped to aid you in selecting a sales-stimulating fragrance to meet every manufacturing requirement.

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Products—Processes—Bulletins—

New Electronic Tester in Use at G. Barr & Co. Plant

Increased efficiency in meeting manufacturers' specifications is made possible by use of a new electronics thickness tester in the Chicago laboratories of G. Barr and Co. Utilized to measure the thickness of tin plate in aerosol cans, a factor in controlling corrosion, the machine reportedly shortens to minutes a measuring operation that had taken hours. By dropping solution into a cell over the tin being tested, the technician starts the electronic measurement which is recorded on the dials. The test being run in the accompanying photograph produced a reading of .32 pounds per base box, or 19 millionths of an inch. Before the development of this device, it was necessary to dissolve the tin plate and subject it to standard analysis. G. Barr tests each batch of cans it fills with the new tester.

Oil Equipment's New Filler

Oil Equipment Laboratories, Inc., Elizabeth, N. J., recently began production of its new "Pres-O" filling machine, which it reports may be used for propane, butane, alcohol and other combustible materials commonly used in toiletries, cosmetic, and household products, without explosion hazard.

Use of the filler eliminates the exposure in open containers of hazardous liquids, permitting the entire filling operation to be handled through container valves. The equipment is operated completely by air, with no electrical controls and no possibility of residual gases being trapped.

Pneumatic start and stop controls are provided for remote operation. The machine handles containers automatically, and in conjunction with the filling heads there are attachments for crimping and evacuating. Used with "Pres-O 500 Series" valves, the operating cycle reportedly leaves an absolute minimum of vapors.

•

Develop New Extrusion Unit

A machine that produces impact extrusion slugs direct from ingot in one operation and without scrap has been announced by Impax, Inc., Ferguson, Mo., a subsidiary of the Universal Match Corp. (The majority of aluminum containers for the aerosol industry are made in an extrusion process.)

In the impact extrusion process, slugs of precision size and accurately controlled grain structure are fed into specially designed presses to form intricate parts in one press operation. Prior to the new process, these slugs had been produced by blanking from sheet or plate, or by cutoff from bar or rod. According to Impax, these methods of slug production involve considerable scrap loss as well as manufacturing problems for the contract impacter.

A machine invented by George Harrison, working with the Impax staff and the Stroman Furnace Co. was installed in a specially built foundry adjacent to the Impax extrusion facilities in Ferguson.

Impax reports that in operation, a multiple cavity water-cooled mold is automatically immersed into a pot of molten metal, and vacuum is applied to draw the metal into the cavities at a predetermined rate. At the power point in the operation, the mold is removed simultaneously from the pot as the gates are cut off. The slugs are discharged automatically by hydraulically controlled knock-out pins in each cavity. The cycle can be carefully controlled to obtain desired grain size, and product uniformity.

•

Miniature Aerosol Filler

Builders Sheet Metal Works, Inc., New York, recently introduced a simple apparatus, which makes it possible to produce any aerosol product using the Builders Snap-On Screw-Top, with a can loaded with the material to be propelled and another can loaded with the propellant. An adapter fills the standard aerosol valve to enable loading of the propellant into the dispensing can through the valve.

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Manufacturers of

QUALITY AEROSOL VALVES

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AND DESCRIPTIVE BROCHURE

SENT UPON REQUEST

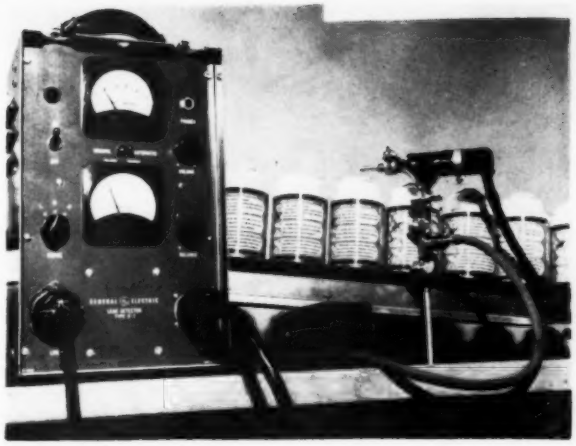
NEWMAN-GREEN, INC.

151 Interstate Road Addison, Illinois

Leak Detector Modified

General Electric Co., Schenectady, reported recently that automatic, high-production leak testing at low cost is made possible through a modification of its Type H-1 Leak Detector. The hand-held "gun" of the standard model has been replaced with a fixed head for attachment to the conveyor belt of mass-produced products, permitting assembly-line testing for leaks of any container which can hold a small quantity of halogen under pressure.

New G.E. Leak Detector

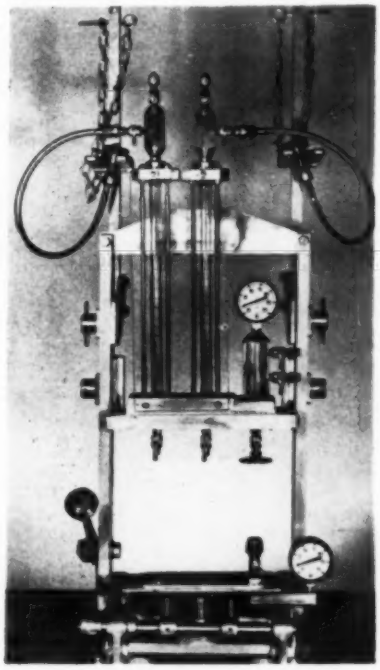


Conveniently mounted, the small fixed head houses the sensitive element. An aspirator pump mounted near the fixed head provides the air-sample flow through the element. Leak defects are indicated visually and audibly, and by auxiliary means it is possible to remove defective items automatically.

Sensitivity of the Type H-1 fixed-head leak detector is 1-3 ppm, and response time is ½ inch per second or better. Power requirements are 120 volts, 60 cycles, 85 watts, 0.96 PF. Net weight of the detector unit is two pounds and the control unit weighs 18 pounds. Further information is available in descriptive bulletin GEC-1410.

New Laboratory Filler

The Nanuet Valve Co., Nanuet, N. Y., last month introduced a new laboratory aerosol filler which uses two different propellants at one time and enables the user to change propellants and formulations in minutes. Among its other advantages the company lists those of permitting test packaging of aerosols accurately, quickly, and easily; checking pressure of filled containers with a handy pressure attachment; filling through any type valve; and beginning small production runs.



The Nanuet filler is precision machined, with a framework of cast aluminum and plated steel. The base is 1½ by 1½ feet, and the filler is just over three feet in height. The two glass pressure Burettes are shielded by plexiglass for safety. The filler is equipped with Hoke flip type valves and is supplied with brackets that allow the mounting of 25 pound gas cylinders on the unit.

Sunex Triples Production

Sunex Division of Sun Tube Corporation, Hillside, N. J., is currently tripling its production capacity for aerosol valves, caps, protective domes, etc. The Sunex Division is a relatively recent entrant into the list of manufacturers of aerosol valves, having initiated production in April of this year. Their first order of aerosol valves was sold to Acrolite, Inc., West Orange, N. J.

Kenneth G. Michel, general-manager of the Sunex Division, advises that they do all their own valve molding in addition to automatically assembling and testing all valves made. Their valve is of the gasket deflection type, which they say permits a consistently uniform spray and controls seepage to a minimum rate.

Particular advantages are also claimed for the basic valve accessories which Sunex manufactures. The push button activating the valve has a protruding nose for easier determination of direction of spray. It also has a lower skirt than has been normal on similar valves, which serves to cover the valve housing portion of the mounting cup. The foam dome is of one piece construction, completely covering the mounting cup. The nozzle is raised for easier application, and the foam dome can itself accept a standard protective dome.

IMMEDIATE ACCEPTANCE

Thanks to VCA *Metered Valves!*

SHULTON'S *new brilliant spray perfumes make exciting gifts . . . thanks to VCA Metered Valves.*

Three more famous names have entered into the Aerosol market with new products and practically over night saw their sales volume skyrocket, thanks to VCA's sensational, exclusive Metered Valve!

If *your* product needs a 'lift' into a brand-new volume market the VCA Metered Valve* may be your answer. THE SPRAY IS MEASURED! THE RIGHT AMOUNT TO SERVE THE PURPOSE IS RELEASED! NOT ONE DROP IS WASTED! Your customer gets full value.

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Courtesy of Modern Packaging

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B18 — GLASS — Sensational new Metered Valve for cosmetics, pharm., etc.

B8 — GLASS — Standard, for perfumes, hair lac., cologne, etc.

B2—FOAM—with exclusive "twist-lok" for soaps, shampoos, creams, cosmetics.

B9 — ALL BRASS or STAINLESS STEEL — with Nylon stem for hair lac., shave cream, pharm., cosmetics, etc.

FOR EVERY NEED . . . A STANDARD VCA VALVE

Aer-O-Fil to Represent Alpha

The Aer-O-Fil Engineering Corp., Bridgeport, Conn., last month was appointed exclusive representative for the Alpha Engineering & Machine Works, Mount Prospect, Ill., in the Northeastern states. Aer-O-Fil's territory will include Virginia, West Virginia, Maryland, District of Columbia, New Jersey, Pennsylvania, New York, and all of New England. At the same time Aer-O-Fil announced the appointment of A. William Whitney (pictured) as sales manager.

Wm. A. Whitney

The company furnishes either single component parts or complete aerosol plants, and offers customer assistance in the selection, engineering, and installation of all types of pressure packaging machinery. In addition to the Alpha line, Aer-O-Fil will install stainless steel tanks, filters, mixers, piping, pumps, compressors, condensers, and packaging conveyors.

Aer-O-Fil's president is Lee J. Wallace, a specialist in propellant handling and refrigeration systems, who also supervises the firm's engineering section. Heading the service department is Al Osman, who was formerly with the aerosol division of Bridgeport Brass. Among the company's recent appointments was that of Leland A. Whitney as treasurer.

•

Alpha Appoints Canada Rep.

The Brantford Oven & Rack Co., Ltd., Brantford, Ont., was recently appointed exclusive Canadian distributor for Alpha Engineering & Machine Works, Inc., Mount Prospect, Ill., a leading U.S. manufacturer of aerosol pressure filling equipment. Fred C. Malloy (in photo), assistant general manager of the Canadian firm, will have charge of this new phase of Brantford activity.

F. C. Malloy

The 50-year old company acts as direct importer and exclusive Canadian distributor for a number of manufacturers in the U.S., England and Germany, specializing in chemical processing, filling, and packaging machinery. According to Brantford Oven & Rack, the agreement will make that company the first to offer a complete line of aerosol equipment in Canada.

•

Newman-Green Price List

Newman-Green, Inc., Addison, Ill., last month issued a new price schedule and descriptive brochure. The list includes the company's B-14, B-14-1, B-14-2, and B-20 aerosol spray valves, and the B-14-B glass bottle aerosol valve. The schedule became effective on November 1.

•

Davis Named Canadian Rep.

Magnus, Mabee & Reynard, Inc., New York, essential oils and flavor firm, last month announced the appointment of Harold Davis & Co., Montreal, Canada, as exclusive agents for the sale of the company's products to the confectionery industry.

Riker Signs Emson Pact

Philip Meshberg, inventor of the Emson metering valve, last month announced that he has sold exclusive rights to make, use, and sell valves under his foreign patents to Riker Laboratories, Inc., Los Angeles. The agreement covers Great Britain, India, South Africa, Israel, and Japan. Mr. Meshberg, president of Emson Research, Inc., Bridgeport, Conn., has announced plans to grant similar licenses in other foreign countries.

SEE ALPHA...

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- Flexibility of arrangement
- Continued cooperation

for
- Aerosol filling machines
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- Laboratory and test equipment
- Processing equipment for Aerated foods
- Accessories

now . . . to better serve your needs Alpha is represented exclusively in Canada by Brantford Oven and Rack Co., Brantford, Canada, and in the Eastern United States by Aer-O-Fil Engineering Corporation, Bridgeport, Connecticut.

On hand to greet you at the CSMA convention in Washington December 3, 4 and 5 will be O. A. Orwoll of Alpha and A. B. Whitney of Aer-O-Fil.

Alpha

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OIL BOUQUET E.T. No. 3126
OIL BOUQUET P.C. No. 3127
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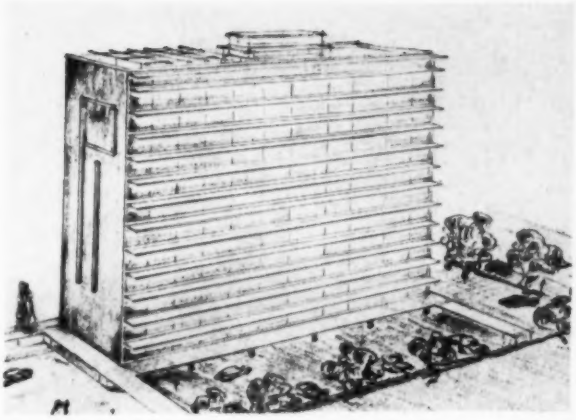

Pegasus International Corp. has just purchased the site opposite Wesley College for this block-long, 12 story office building in Melbourne, Australia. Draft sketch by the company's consulting engineers shows the projected building which will be surrounded by grounds that will include promenade, gardens, and space for 200 cars.

Pegasus in Australian Purchase

In a move to expand its Australian facilities serving U. S. business interests, Pegasus International Corp. New York, has announced the purchase of a $80,000 site for a projected block-long, 12-story office building in Melbourne. Organized in 1951 as the first commercial organization in the now-popular field of international management consultants, Pegasus today boasts six overseas offices throughout the world.

The company's newly acquired Melbourne property is located at 578 St. Kilda Road, opposite Wesley College, and includes one of the oldest mansions left in an area fast becoming Melbourne's commercial center. The mansion will be renovated immediately to serve as temporary offices for Pegasus International (Australia), while plans are being completed for the 12-story tower-type structure which is to be built in the near future.

Guest Editorial

(*From Page* 29)

must also surround himself with *experienced* manufacturing talents as well as research and engineering talents. These talents, to be capable, must be born of actual experience in aerosol manufacturing. In order to justify economically such large expenditures it takes a minimum of between 15-25 million units of sales, in my opinion, to be able to justify adequate equipment and personnel.

It is heartening to know that the major marketers are still relying primarily on the custom filler for technical guidance and productive capacity and it is with this real vision and understanding of the true abilities of the custom loader, even if they do at some time in the future manufacture some of their own products, that they will never *completely* sever themselves from the abilities, knowledge and creativeness available to them through the contract loader and manufacturer.★

New Shipping Sleeve

This new open-end wrap-around shipping sleeve has been designed and produced by Container Corp. of America, Philadelphia, for Carter Products, Inc., New Brunswick, N. J., manufacturer of Rise shave cream. Designed to ship either six or three cans (a perforation in the center of the six-pack cuts it into two three-pack units) the sleeve permits automatic loading and closing and eliminates the need for corrugated partitions. Circular cut-outs on both sides permit rapid pricing at retail level.

Aerosol Publicity

(*From Page* 43)

tee. The Publicity Agency will be guided by a representative group of the CSMA Aerosol Division who have contributed to the program. This Steering Committee will determine the policies of the program and

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will be the advisory committee for the Publicity Agency.

Your support is vital for the success of this program. You will find your name on the attached list of CSMA aerosol members who are being asked to subscribe to our AEROSOL MARKET DEVELOPMENT AND PUBLICITY PROGRAM.

The anticipated starting date for the above program is January 1, 1957 and your subscription should be received at the CSMA office as per the enclosed form, by December 15, 1956.

FREDERICK J. LODES
Chairman
Aerosol Publicity Committee

Why They Buy

(*From Page* 34)

and conceptions; to their own brand imageries; to the approaches, the phrases, the packages, the incidents, the colors, that influence them. Simply to what impels them to buy Brand A instead of Brand B.

The human animal has a complex mind. His actions and reactions are often odd but frequently predictable. They derive from an interplay of inclinations and impulses, of experiences and emotions. Let us dwell for a moment on terminology. As we have intimated, it is probably extremely unwise to refer to an aerosol insecticide as a "bomb," but such a destruction-connoting term is even more unfortunate for use in connection with other aerosol products. It may be desirable to promote a hair spray from the standpoint of do-it-yourself, and to stress ease of application. But if it is a paint-spray to be sold to the ardent do-it-yourselfers who labor in basement workshops, the "ease of application" theme might well meet a negative response. Such diligent folk are often proud of the energy they expend. To buy a paint which can be applied so easily and amateurishly could well be in conflict with their concepts. The quality of the finish, for instance, might be the more promotable element.

Or consider perfume. Millions of dollars worth of atomizers have been sold over the years. Our observations indicate that women are eager to consider aerosol perfumes. They seem to have satisfied themselves that perfumes in this form are more economical. (This savors of rationalizing, but it is a positive type of rationalizing which in a sales sense is constructive.)

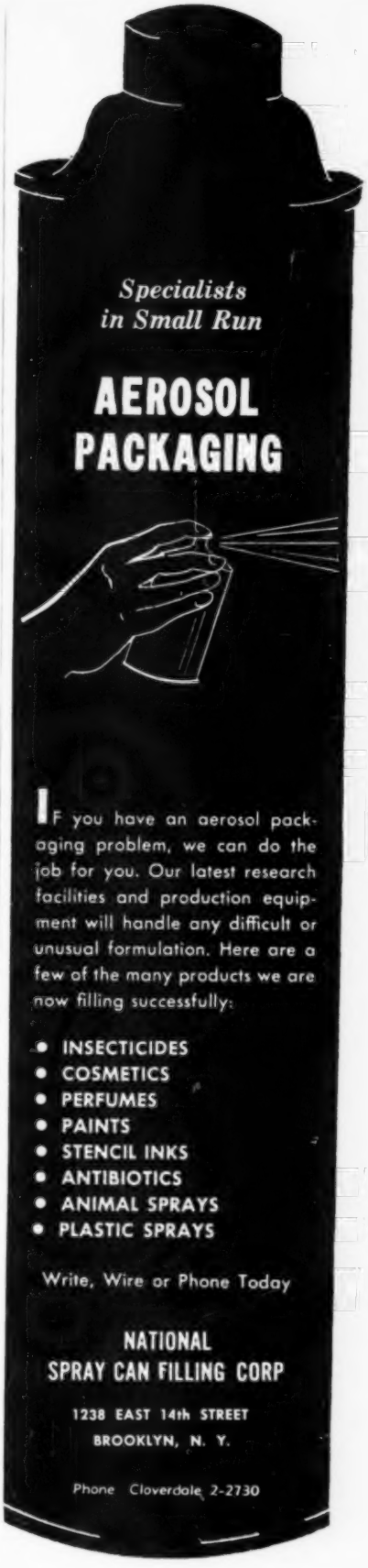
Women say that perfume bottles spill; that perfume is dabbed on and that is wasteful; that perfume evaporates from a bottle. Indeed, a good many women seem to have built up — all ready — a solid case in their own minds to justify their buying aerosol perfumes. They really *want* to buy perfume, but they need some self-justification. In their envisioning an aerosol they have conjured up an adequate degree of self-justification.

Nonetheless, there is an underlying element of uneasiness. As yet the preponderant public image of aerosol-packed perfumes is of "cheap" perfumes. Some upgrading of the image in the public mind is demanded.

One of the ways in which this can be accomplished, of course, is through package design. A fittingly designed container is of tremendous importance. We might anticipate, for instance, that a degree of fragility would be appropriate and sales-promoting for colognes and perfumes. A rugged, hand grip package could be a sales-builder for insecticides. So it goes. Therein will lie some of the determinants of brand futures. The ideal package outline, the effective use of color, the design of packages to afford both functional and emotional allure, all are matters which marketers will have to consider more earnestly.

As industries go, the aerosol industry is but an infant. It has grown lustily and is destined to continue to grow. The public has been intrigued by the novelty and efficacy of the "new" products. This has sprung in some measure from a dormant desire for better products. Now the appeal of novelty is wearing; the industry must develop without the same exuberance which novelty gave it.

That means that firm and hard courses are going to have to be charted by each aerosol marketer if he is to prosper. The dividends will not necessarily go, as they have in the past, to the swift: the odds are that the thoughtful, analytical and perceptive — in terms of functional and psychological needs — will amass the profits.★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- Will not clog or produce usual sticky film of lanolin.
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- Produces crystal clear solutions.
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Who's Who in the Aerosol Industry

CLARENCE F. CARTER, president and board chairman of Continental Filling Corp., Danville, Ill., is a firm believer in speed and applies it with skill to aerosol filling techniques. One of the earliest to envision the future of aerosols, he and his associates founded Continental in 1946 among the pioneer custom and contract fillers of pressurized products. He and his engineering associates have designed and built all of their own specialized aerosol filling equipment right from those early days.

Mr. Carter's career of engineering, mechanics, and speed began when, at the age of 14, he raced horses at Texas county fairs. After that, he raced motorcycles in Illinois and dirt track autos in California, became an airplane pilot and raced planes as late as 1940, and crowned his racing accomplishments with the National Inboard 151" Motor Speedboat Championship in 1928. He still flies his own plane.

During this period he started the Modern Machine Shop in Danville (1922), and in 1942 organized the Carter Engineering Corp. to design and manufacture "CarterVac" fillers, special high-speed powder filling machines. In 1944 his company designed and built the world's highest speed powder filling machine—capable of filling 360 containers per minute.

Since its beginnings ten years ago, Mr. Carter has guided Continental Filling's rapid progress in the field of pressurized packaging.

•

Herbert D. Fine, at the age of 21, founded Plasti-Kote, Inc., in Cleveland, Ohio, with just $300 capital and an inquisitive mind. He had begun his career as a small retailer and manufacturer of paints and clear and pigmented plastic coatings for linoleum, but at the end of World War II became so intrigued with the aerosol principle that he began to experiment actively with paints and enamels in small spray cans.

So successful was this venture that Plasti-Kote has since expanded to become one of the largest producers of aerosol paints, lacquers, and other consumer products for home and automobile. The company now also provides a packaging service for other manufacturers. From the original $300 capital, half of which Mr. Fine recalls was invested in empty paint cans and labels, Plasti-Kote has grown in value to its present half million dollars.

Mr. Fine believes that, in the near future, department stores, drug stores, gas stations, supermarkets, and every kind of retail outfit will have an aerosol department where everything from engine degreasers to shaving cream may be purchased. Banking on this belief in the future of pressurized packaging, Plasti-Kote last year built a modern new 24,000 square-foot plant, designed especially for production capacity.

Herbert D. Fine

Mr. Fine reports that sales of his company are running 25% ahead of last year, and predicts that they will expand five-fold in the next few years. He advises that the new Plasti-Kote 1957 line will be introduced in New York in February.

Andrew H. Wolff, vice president of Pegasus International Corp., New York, has been one of the guiding hands of the firm's interest in the development of the aerosol industry abroad. Since only 1953, when it entered the field of pressurized packaging, Pegasus has attained a leading position in advising both foreign and American groups on all aspects of the aerosol industry.

Andrew H. Wolff

Mr. Wolff was born in Newark and grew up in Bridgeport, Conn., a city now famous in the aerosol industry. He was graduated from Yale University in 1948 and joined the sales staff of Ortho Pharmaceutical Corp., Raritan, N. J., later going to the Columbia Commerce and Credit Corp., New York, an export firm. He was one of the organizers of Pegasus.

Mr. Wolff still preserves an active amateur interest in entomology, and remarks: "You used to have to chase bugs with a butterfly net. Now you can sit under the shade of a tree and blast them with an aerosol as they go by. Even adding specimens to a collection has been subjected to 'push button convenience'."

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Consult Polak & Schwarz for any and all aerosol problems.

Polak & Schwarz Inc.,
667 Washington Street, New York 14 (N.Y.)

Aerosols in Review

(From Page 63)

ing the finished aerosol package and marry them successfully. In most cases it wasn't practical for a paint maker to carry out the operation and still price his products to sell at a profit. Aerosol filling is a specialized affair. The equipment itself is by no means inexpensive. And to get a decent return on investment these machines must be run at a steady clip. Few paint manufacturers do that big an aerosol business.

"This is where the custom filler enters the picture. He fills paint, he fills hair lacquer, he fills shaving cream, fire extinguishers, insecticides, oven cleaners, room deodorants. Versatile applications and quick changeover of basic machines lets him keep his equipment busy at a low but profitable price.

"It has been estimated that 90 per cent of the aerosol paint on the market is packed by custom fillers. They almost invariably use cold filling because of its speed (pressure filling, is more efficient from a raw materials standpoint but is markedly slower). It's important to a custom filler to keep his equipment going. A paint manufacturer who does his own filling, however, might find pressure filling more suitable.

"In custom filling, the paint manufacturer supplies the formulation and all or part of the raw materials to the aerosol producer, who in turn ships back the finished package, made to specifications. Actually the filler is much more than that in the team. He is an unbiased and sound source of information on all aspects of aerosols — containers, labels, formulations, propellants, valves. Paint makers interested in getting their share of the growing aerosol business could do much worse than to consult reputable custom fillers before taking any other step."

Some suggestions on the selection of a custom filler are offered, with several quotations (without credit to us, incidentally) from the article by A. O. Samuels, president Connecticut Chemical Research Co., Bridgeport, Conn., which appeared in the May, 1956, issue of *Aerosol Age*. The *P. O. & C. RV.* article concludes with an outline of the facilities and operating set-up of Aeropak, Inc., Chicago, described as the biggest custom filler for the paint industry. The major problem that the custom filler faces is one of coordinating all the elements of the finished product, it is emphasized. Every custom filler will share the feeling of frustration which so often results and is expressed as follows by Anthony Major, assistant to the president of Aeropak, Inc. "The custom filler is always on the spot. Everybody wants everything done yesterday. If anything goes wrong, it's his fault. He has a tremendous coordination problem, working as he does with somebody else's raw materials, somebody else's cans, somebody else's valves, somebody else's propellant, labels, formulations. He's just the assembler."

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New Aerosol Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication.

Complete copies of these patents may be obtained by writing to the publisher of this magazine, Aerosol Publications, Box 31, Caldwell, N. J., and remitting 50c for each copy desired. For orders received outside of the United States the cost will be $1.00 per copy.

2,766,072 AEROSOL SPRAYER WITH A REPLACEABLE CARTRIDGE. Patent issued October 9, 1956 to Joseph Commarato, Mountain Lakes, N. J., assignor to Standard Container, Inc., Rockaway, N. J. An aerosol dispenser which consists of a container shell, a fluid-tight cover plate for the container shell, a depressed portion in the cover plate having an orifice therein, an internal retainer cup positioned over the depressed portion, a compressible ball held by the retainer cup in sealing relation with the orifice, a tube for fluid flow between the retainer cup and the interior of the container shell, a nozzle base having a centrally bored passageway therein, said base being fixed in sealing relationship within the depressed portion of the cover plate with the passageway aligned with the orifice, a valve pin riding in the passageway, a nozzle cap including an expansion chamber in communicating relationship with the passageway, a spray orifice in the cap communicating with the expansion chamber and a depressible means in the cap for actuating the valve pin.

2,766,215. PROCESS FOR POLYMERIZING CHLOROTRIFLUOROETHYLENE. Patent issued October 9, 1956 to William N. Stoops and Bruce Thompson, Charleston, W. Va., assignors to Union Carbide and Carbon Corp., New York. Process for forming aqueous dispersions of polymeric chlorotrifluoroethylene, which comprises dispersing monomeric chlorotrifluoroethylene in an aqueous solution containing a water-soluble polymerization catalyst and as a dispersing agent one of the group consisting of perhaloalkanoic acids of the structure:

$$F(CClFCF_2)_nCClFCOOH$$

and their salts, where n is an integer, and polymerizing the dispersed chlorotrifluoroethylene.

2,766,913. DISPENSING VALVE. Patent issued October 16, 1956 to August E. Wilshusen, Whittier, Calif., assignor to Development Research, Inc., St. Louis, Mo. For use with a gas-pressure dispenser adapted to dispense a fluid in gas-expanded state, a dispensing valve assembly comprising a cap adapted to be secured to the mouth of the container and having a central opening, an annular valve seat positioned against the under side of the cap in registration with its central opening, a valve having a stem extending upward through the said annular valve seat and opening and having a head at the lower end of the valve stem, said head including an outer seating margin adapted to engage upwardly and seat against the annular valve seat, the valve head further having an annular fluid drain recess radially inward of said seating margin and outwardly adjacent the stem whereby fluid drainage of a portion of the fluid being dispensed may gather within the fluid drain recess adjacent the seating margin and thereby augment the sealing of the valve assembly.

2,766,914. VALVE STRUCTURE. Patent issued October 16, 1956 to Austin R. Baer, Chestnut Hills, Mass. A device for dispensing liquid and gaseous material under pressure comprising a hollow body having an inwardly tapered formation, an opening into the body at the inner end of said formation, a head member disposed substantially along the axis of the tapered formation, a set-off on the head member providing a retaining and sealing surface facing the opening into the body, a neck portion and adjacent larger end portion on the head member, said end being slightly larger than the opening in the tapered formation and retained by peripheral engagement with the opening to prevent outward movement of the head member, a sealing ring fitted around the head member above the neck and held in compression by the set-off against the tapered formation, a channel extending through the head from the outer end of the head member to the surface of the head member under the sealing ring, means permitting passage of the material into the tapered formation wherein the contents are sealed by the head member compressing the ring and released by pivoting of the head member about the opening to compress the ring on one side and open the channel on the other, the seal of the set-off against the ring member and the ring against the tapered formation remaining unbroken.

2,766,915. DISPENSING VALVE STRUCTURE FOR AEROSOL CONTAINER. Patent issued October 16, 1956 to Albert B. Campbell, Bensenville, Ill., assignor to Campbell Products Co., a corporation of Illinois. A dispensing valve structure for an aerosol container comprising: a valve housing having an

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opening, said housing having means for being attached to a container; a resilient sleeve secured against the inner side of said housing permitting selective sealing of said opening in the housing, said sleeve having a bore extending therethrough for guiding and permitting movement of a valve stem therein and a valve seat about said bore on the inner side of said sleeve; a valve member having an elongated stem portion extending through said bore beyond the outer side of the housing, said stem having a valve head at an inner portion thereof capable of being seated against said valve seat, thus permitting selective sealing of said bore; spring means circumscribing an outer end portion of said stem positioned against the outer side of the housing, the outer end of the spring being positioned about an outer end portion of the stem so that movement of the stem into the container unseats the valve from the valve seat and causes compression of the spring, said compressed spring serving to urge the valve into the valve seat; a spout-cap having a skirt portion circumscribing the spring and the outer end portion of the stem, the lower end of said skirt having retaining means for permitting the cap to be selectively secured to and removed from the outer side of the housing, the upper end of the skirt having a flexible top which, when depressed, moves the stem towards the container, depresses the spring, and unseats the valve, thus permitting the contents of the container to enter the bore, the interior of the cap, and to be ejected out through the spout which extends from said cap, said spout-cap permitting access to the valve assembly that extends beyond the outer side of the housing when said cap is removed from the housing to facilitate the cleaning of exposed surfaces.

2,767,873. Labeling Machine. Patent issued October 23, 1956 to Alten E. Whitecar, Westville, N. J., assignor to Smith, Kline, & French Laboratories, Philadelphia. In a labeling machine adapted to apply a label to a container surface; supports for opposite ends of a container, one of said supports being retractable in order to provide a large area for labeling, means to retract said retractable support after placement of the container therein and means to apply a label to the surface of the container so that a portion of said label is overlying a portion of the area occupied by said retractable support means before it was retracted.

2,767,888. Shields and Caps for Containers. Patent issued October 23, 1956 to Jack W. Soffer, St. Louis, Mo., assignor to Development Research, Inc., St. Louis, Mo. A shield and cap assembly for metal containers of the type having a rimmed mouth terminating in a protruding sheared sheet metal edge and a dispensing valve mounted in such mouth, comprising a molded plastic annular shield member having a perimeter

rim adapted to fit over the rimmed mouth of such container, the said perimeter rim having a retention means molded integral with and inside the said rim adjacent to its lower edge and held against such sheared edge by the said rim, whereby to resist removal therefrom and twisting thereon, the said shield member further having an angular body portion tending inward from the upper margin of the shield rim to a central circular opening, and being adapted to protectively cover such rimmed container mouth around such dispensing valve, the said assembly further comprising a molded plastic closure cap having a top, a side wall enclosing a cavity adapted to accommodate such dispensing valve, a lower cap margin adapted for close fit against the annular shield adjacent its central opening, and screw threads adjacent said lower cap margins adapted to hold said cap in secure closed contact with said shield member.

2,768,031. AEROSOL GENERATOR. Patent issued October 23, 1956 to William L. Tenney, Dayton and Scoville E. Knox, Phoneton, Ohio; said Knox assignor to said Tenney. An aerosol generating device comprising a casing, heat and sound insulating means enclosing the main body of said casing, a resonant intermittent combustion engine having its major portion including at least a part of its combustion chamber and the entire extent of its exhaust resonator tube within said casing, a discharge passage in the rear wall of said casing in spaced and disconnected relation with said discharge outlet from said exhaust resonator tube, and means for introducing a formulation into said exhaust resonator tube of said engine for discharge through said outlet and for deflected flow through the interior of said casing in heat transferring relation with the engine therein before delivery from said outlet passage.

•

CanCo Elects G. J. Madge

The American Can Co., New York, recently announced the election of George J. Madge as a vice-president in the executive department. A veteran of 44 years with the company, he has been controller of the company since 1950.

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Fairfield Moves N. Y. Office

The Fairfield Chemical Division of Food Machinery and Chemical Corp., Baltimore, last month announced that its sales headquarters will be located at 441 Lexington Ave., Room 408, New York 17, effective Nov. 19. The telephone number is OXford 7-1940.

Chesebrough-Pond's Moves

Chesebrough - Ponds, Inc., New York, has announced a consolidation of its offices on the 11th floor of 485 Lexington Ave., New York 17. Phone number of the new office is Oxford 7-4900. The firm formerly maintained offices at 17 State Street and 380 Madison Avenue.

Risdon Granted New Patent

The Risdon Manufacturing Co., Naugatuck, Conn., late last month announced that it has been granted U.S. Patent No. 2,767,023 for its aerosol container spray nozzle sold under the trademark "Micro-Mist." The nozzle was especially developed for use with water-base and other products which will not mix with a propellant. According to Risdon, it gives a deluxe atomizing performance when used with either the conventional two-phase or with ultra-low pressure products.

The Micro-Mist delivers a wider-cone, drier, and finer spray cloud which makes product contents last longer and diminishes their dilution.

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Editor's Mail Bag

(From Page 14)

Also if you have published articles or have any personal knowledge of the success of the aerosol method of dispensing moth proofing products, I would appreciate having that as well.

Mrs. Joann Alstad (research director)
KLAU-VAN PIETERSOM-DUNLAP, INC.
Milwaukee

We have already supplied what information we have, and referred our inquirer to other sources as well. We shall be happy to pass along further suggestions which might be helpful from readers who may have direct and useful experience in the field. — *The Editor.*

To readers in other countries, your note on "Aerosols in Holland", October issue of *Aerosol Age*, pg. 44, may be quite interesting, and it is at least something on the subject. However the picture presented is something less than completely accurate.

In your article, the emphasis is placed on the big essence manufacturers who indeed have had great success in the development of aerosol perfumes. They have done some important work in this field. But one wonders where aerosols come into the picture. You mention too that plans are afoot for the establishment of captive loading plants, and you mention Dralle who have been on the market with some good products of their own for some time. At the same time, however, your European correspondent mentions that on visiting a Rotterdam drugstore, he spotted 17 different aerosol products.

Where do all these aerosols in Holland come from? Who is filling them?

Most of them are American containers, Crown Spra-trainers to be precise. Some of them are being imported from America as finished products and are quite expensive, mainly on account of freight and import duties. Others are being filled by captive loaders. The majority, however, is being handled by the Aerosol Company Holland N. V., full sized contract loaders.

We started contract loading in this country about five years ago and stuck to it. Our turnover last year was well over 1,500,000 containers just for this single filling station. The entire Dutch industry does an annual volume of 10,000,000 which should soon warrant Dutch production of aerosol containers which will of course have to be at least as good and as cheap as American containers.

Germany is already turning out containers similar to Crown Spratainers. They may find a market in Germany, but they are not competitive abroad.

Very much the same thing applies to aerosol valves. There are at least six European countries in which aerosol valves are being produced under license. We strongly doubt, however, whether they are making any profits, or whether they may expect to make any for a long time to come. In our opinion, they have no reason for existence. Not yet!

We have seen no reason whatsoever for buying certain types of valves in Germany and paying more for them than for precisely the same types from the United States. Even transportation costs do not make up the difference.

As for our organization, our program is to continue doing business the American way. The aim is mass production of quality products at the lowest possible price. If one wants to establish a permanent place in the aerosol market, this is the only clean purpose worthy of pursuit, but as things are now there will be a long way to go. *Aerosol Age* has found good acceptance in Europe. If you are interested in more news and opinions from this side of the Atlantic, don't hesitate to call upon us.

L. Workum
THE AEROSOL COMPANY HOLLAND N. V.
Hilversum, Holland

We are glad to have expressions of opinion, news items, editorial suggestions, etc., from all readers of *Aerosol Age*, in the overseas as well as the domestic market. The important role of the AEROSOL COMPANY HOLLAND N. V. in the Dutch aerosol market is well covered in an article in the October issue of the *American Exporter Industrial*, reviewed elsewhere in this issue (pg. 63). — *The Editor.*

For some time we have been trying to locate the maker of a two-way valve which produces either a fine spray or needle-point stream. Such a valve is made, for we have purchased a sample can of a penetrating oil in a container which uses this type valve.

"We have scanned your publication but have not seen this product advertised. Can you tell us the name of the manufacturer?"

Eugene D. Koch
THE MAX WOCHER & SON CO.
Cincinnati, Ohio

We have contacted several manufacturers of aerosol valves and none of them make such a dual purpose valve nor does any of them know who might supply such a valve. Perhaps one of our readers may have further information which would be helpful.
— *The Editor.*

I would be greatly obliged if you would let me have the name and address of the company which manufactures the "Non-Clog" aerosol valve. This valve, I understand, is extensively used in U.S.A. for the aerosol packing of paints and lacquers.

H. Weinberger
THOMAS MOUGET & CO., LTD.
London, England

The "Non-Clog" valve for paints and lacquers is made by the Aerosol Research Company, 743 Circle Avenue, Forest Park, Illinois. — *The Editor.*

I have noticed that on page 39 of the September issue of *Aerosol Age* that you have an article about Stanley J. Goldberg of Aerosol Research Co. stating that he created the LA-10 Threaded Style Lower Valve Assembly and the DD-10 Removable No Klog Spray Head.

I am sure that you did not receive authentic information regarding the DD-10 Spray Head, as I invented and received Patent on same—Patent #2,587,040. The LA-10 Lower Assembly is used in conjunction with the DD-10.

Demand For Emson Metering Valves Continues To Expand

Emson Research, Inc., 118 Burr Court, Bridgeport, Conn., manufacturers of the Emson Metering Valve reports increased demand for this new valve. National manufacturers of toilet goods, pharmaceuticals and other personal products are looking to this new patented metering valve to increase their sales and profits. Most aerosol packages presently being marketed would have more consumer acceptance with a metered valve which would dispense just the right amount of product. One real consumer "gripe" in using a product packaged in aerosol form is its uncontrollable waste whether it be shaving cream, cologne, air freshner, anti-perspirant, deodorants, hair touch up, hand lotions, shampoos and any other products already packaged in this form and many more that could be packaged.

As for pharmaceutical products, an accurate metering valve is essential, since most of these products require a prescribed dosage. The Emson valve is presently available in three sizes, 50 mg., 100 mg., and 150 mg. It is possible to manufacture this valve to dispense from 25 mg. to 3 mg. in weight. The valve can be supplied with parts made of either stainless steel, brass or aluminum and can be mounted on all present types of aerosol containers such as glass bottles, drawn cans with 1" openings, standard side-seam cans and two-piece containers.

The increased production of the Emson Valve has made possible a reduction in price which will become effective as of December 10, 1956. Incidentally, the Emson Metering Valve can be pressure-filled. Samples and prices and additional information can be obtained by writing Emson Research, Inc., Burr Court, Bridgeport, Conn. or contacting Mr. Philip Meshberg at the CSMA Convention at Washington on December 3, 4 & 5.

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At the time I sold my interest in Aerosol Research Co. to Mr. Goldberg, I assigned the patent rights. However I was the inventor of said spray head and not Mr. Goldberg. I feel there should be a correction of this particular statement.

Edward H. Green
NEWMAN-GREEN, INC.
Chicago

Aerosol Age was responsible for the error, and not Mr. Goldberg. Mr. Goldberg comments as follows:

It is certainly true that Mr. Green invented and received a patent on the No Klog removable spray head. However, in running your correction, the following information should also be published. While Mr. Green invented and patented the No Klog removable spray head, I was responsible for the original idea. Prior to my contacting Newman-Green, I had worked over a year with many other companies trying to perfect a removable spray head. Following Mr. Green's work in perfecting the device, our company, the Dyna Spray Corporation, contracted to take the entire output on an exclusive basis from Newman-Green Co.

Stanley J. Goldberg
AEROSOL RESEARCH CO.
Chicago

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OVER THE TRANSOM

MEET the original aerosol manufacturer, — "Stinko," complete with can, valve, special formulation and propellant. He's been the official mascot for AEROSOL AGE since he was picked up by one of our staff early this summer outside Armstrong Laboratories in Boston. Bob and Jack Armstrong advised he was there on business, — to check up on a deodorant line they're filling.

* * *

Swedish readers gasped with shock on reading the article on the Swedish Aerosol Market by Andy Wolff of Pegasus International Corp. in the October issue of AEROSOL AGE. *Seems Andy referred to the "president" of Sweden. D. H. Steiner of Skandinaviska Aerosol Aktiebolaget, Stockholm, comments kindly and amusingly on the error, pointing out that there is a common saying in Sweden, pretending that the United States are a kingdom, the king of which is called "president." Sweden on the other hand is a republic, the president of which is called "king." He concludes with the hope that King Gustav VI will forgive both Andy and the publisher, and offers his congratulations on a "very good article indeed."*

One of our friends writes to ask if we plan to publish an index. Indeed we do, and should have same completed in time for inclusion in this December issue. Incidentally he added a few comp'iments on the editorial content of our first year's issues, saying "I doubt very much if many publications are read as assiduously from cover to cover, and word for word,—then put aside for picking up and re-reading."

* * *

If we have done nothing else with our new publication this first year, we have at least stirred up some of the other trade papers connected with the aerosol field in one way or another. Illustrating what a healthy influence a little competition can be, a few magazines are actually starting to publish some *text* on aerosol topics, instead of just running the advertising. In some cases they have even written an occasional article of their own. It is probably still safe for us to state, however, that in its first eight issues AEROSOL AGE has prepared and run more original material on aerosol topics than have all the other trade publications together in the past ten years.

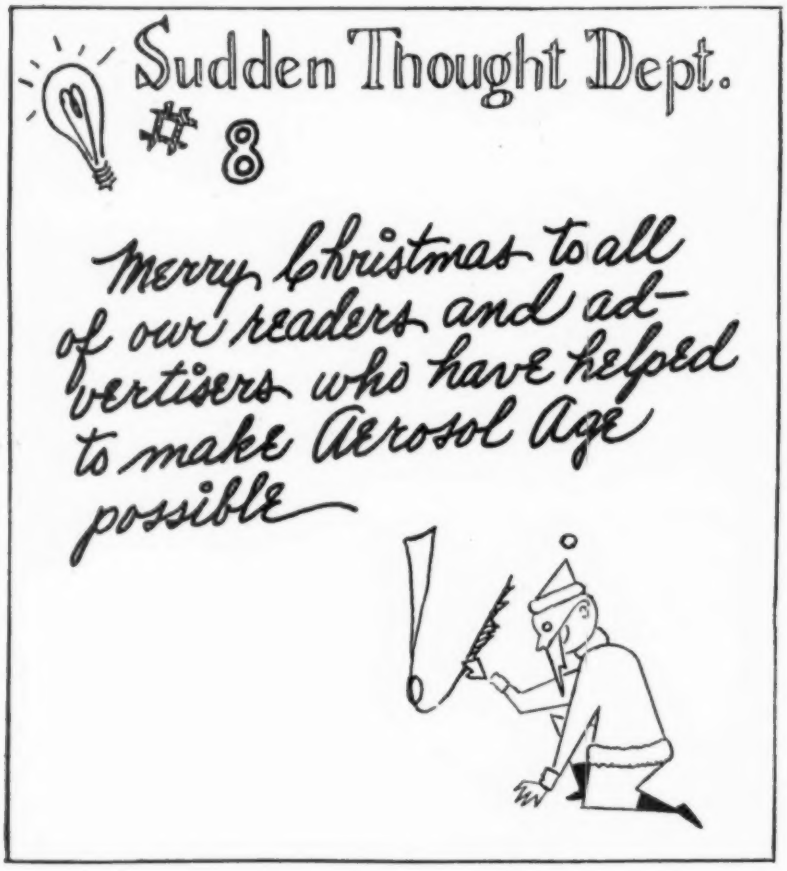
* * *

While they haven't been particularly creative in other ways, however, some of our contemporary rivals in coverage of the aerosol field have shown remarkable imagination in the stories they have cooked up and are circulating re AEROSOL AGE. *First one we had called to our attention was that we were shaky financially, and probably wouldn't be in business by December. They must have access to details of our financial statement that have been denied to us.*

Next came companion predictions that we would not be able to find sufficient (1) *editorial material,* (2) *advertising support, to justify a specific publication for the aerosol field. We refer the boys who did this forecasting job to our current issue.*

The latest rumor we have been forced to run down and brand as a straight fabrication is that one of the leading suppliers to the aerosol trade has a substantial stock ownership in AA, *and has entered two thousand subscriptions to be sent to its customers. The facts are that no one apart from the staff of the publication owns stock, and no one has entered any bulk subscription order of any kind.*

P.S. No stock is for sale, but we'll sure take any sub orders that you care to send.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8
merry Christmas to all of our readers and advertisers who have helped to make Aerosol Age possible

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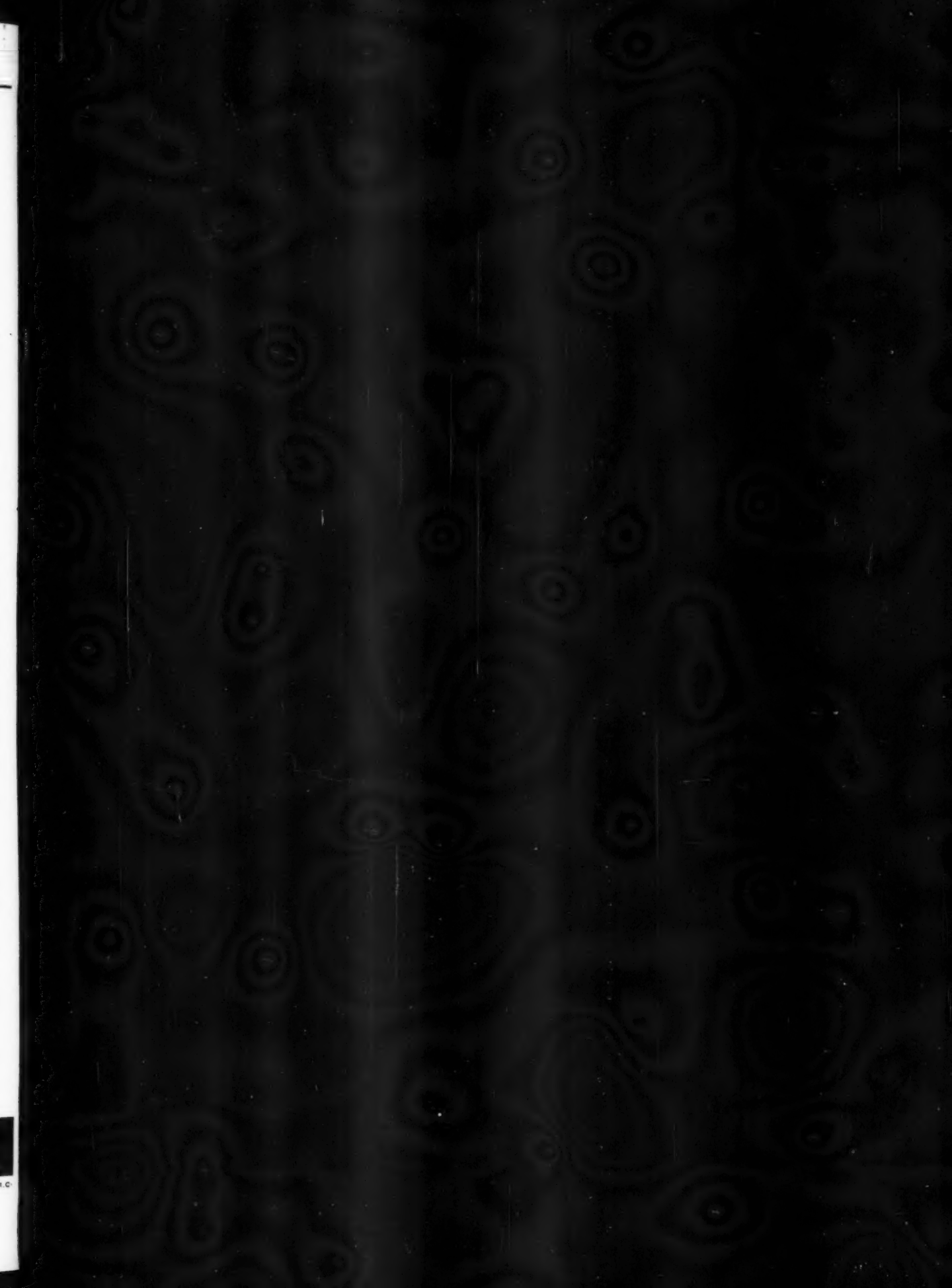
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